

THE NATURAL HISTORY
OF SOUTH AFRICA

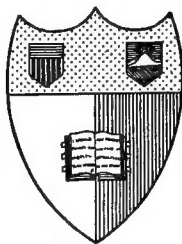
B. W. TRILSIMONS

MAMMALS

VOL. II.

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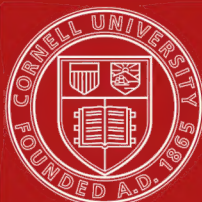
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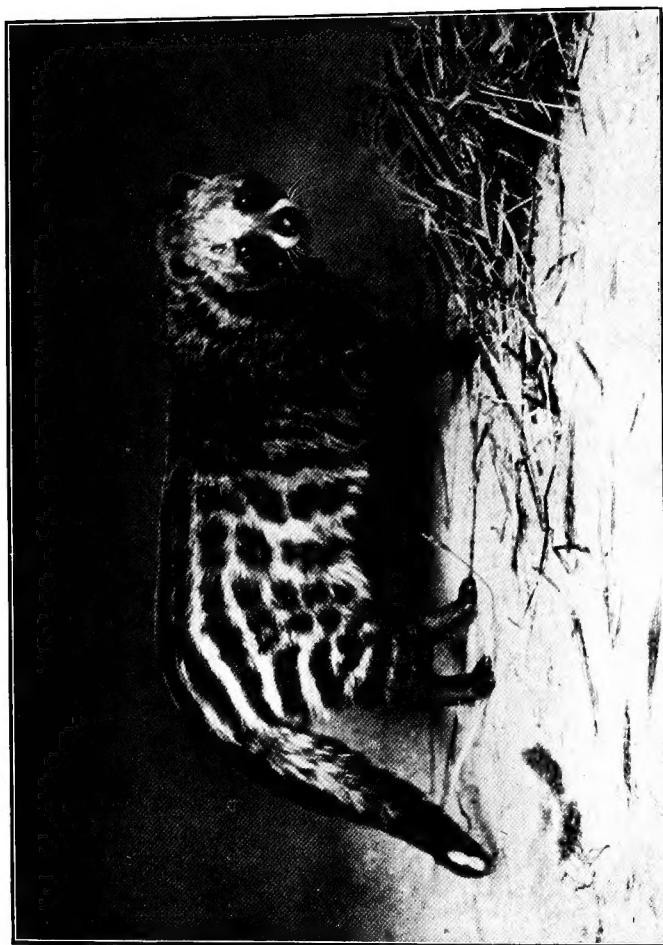


Photo: A. S. Rutland.

The Civet Cat.

THE NATURAL HISTORY OF SOUTH AFRICA

INCLUDING CIVETS, GENETS, MUNGOOSE, MEERKATS
EARTH WOLVES, HYÆNAS, JACKALS, FOXES
WILD DOGS, OTTERS, HONEY RATS
MUSHONS, AND SEA LIONS

BY

F. W. FITZSIMONS, F.Z.S., F.R.M.S., &c.
DIRECTOR, PORT ELIZABETH MUSEUM

MAMMALS

IN FOUR VOLUMES

VOL. II

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 Sub-order : **Fissipedia**
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 Family : **VIVERRIDÆ**
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THE NATURAL HISTORY OF SOUTH AFRICA

THE CIVET CAT

(*Viverra civetta*)

Also known as the Lisisi of the Basutos ; Mpicamadhloti of Swazis (*Kirby*)

THE Civet is not at all well known in South Africa, for the reason that, although it is common in the tropical portion of Africa, it only extends as far south as Mashonaland and the eastern part of the Transvaal. It is a shy secretive animal like the mongoose, and is nocturnal, except in the wild secluded districts, where it occasionally may be met with on dull cloudy days, or late in the afternoon—usually about sunset. It haunts the bush-veld, wooded hillsides, and kloofs. On the least cause for alarm it creeps noiselessly into the undergrowth and vanishes from view. It is usually hunted by dogs from its bushy retreats, and is then easily captured or killed.

NATURAL HISTORY OF SOUTH AFRICA

The food of the Civet Cat consists of small animals, birds, reptiles, and insects.

Man cannot tolerate this cat in his neighbourhood, for it takes every opportunity of destroying and devouring his poultry, often killing a dozen in a single night, like its bloodthirsty cousins the muishonds, weasels, and wild cats.

The Civet Cat is particularly interesting for the reason that it is the animal which supplies the substance known as "civet," which is secreted by two glands situated at the base of, and under, the tail. This substance is the well-known civet which was formerly in great demand as a perfume. It is, however, not used at the present time to any considerable extent in Europe.

In the tropical parts of Africa the natives capture these Civet Cats and confine them in cages, or tie them up by passing a ring through the nose. At regular intervals the perfume-secreting glands are emptied of their contents. This is subsequently bartered to Arab and other traders.

The African Civet Cat is a little over four feet in length from the nose to the tip of the tail. The body is flattened at the sides ; the limbs are short, and the feet small and rounded. General colour of the hair brownish-grey, covered with dark streaks and blotches, which on the front parts of the body tend to form transverse lines. The ears are broad, short, and rounded, black at the bases, and white at the tips. Along the back from between the ears to the

THE CIVET CAT

base of the tail the hair is long, forming a crest. The tail from the root half way along is ringed with white. These rings are interrupted by a black band running along the upper part of the tail. The tail towards the tip is quite black.

In the wilder parts of the country, away from the habitations of man, the Civet Cat fulfils its mission in life by checking the too rapid increase of various animals, including such pests as venomous snakes, rats, mice, locusts, and a variety of insects more or less noxious to mankind.

The Swazis call this animal the *Mpicamadhloti*, which means "that which puzzles spirits." This is evidently because of its shy and secretive habits, which are supposed to baffle even the powers of a spirit to find it.

THE GENET

Also known as the Musk-kat or Misselyat-kat ; Insimba of Swazis and Zulus (*Kirby*) ; Inywagi of Amaxosa (*Stanford*) ; Tshipa of Basutos (*Kirby*)

THE Genet is one of the cat family of animals, and in South Africa its nearest relations are the Civets and the Mongoose.

Genets are nocturnal, except in the more secluded districts, where they may often be surprised during the daytime in the act of hunting for prey in the shades of the forest or in secluded gloomy kloofs.

Their favourite haunts are the bush-veld, scrub-covered hillsides, kloofs, and forests. During the day they lie concealed in the midst of thick tangled undergrowth, rank matted grass, extended full length along the branch of a tree or in a hollow in the interior of the trunk. Now and then they are found in rock crevices, or down holes excavated by other animals, and which the original occupants have abandoned.

The genet is silent and secretive, in the extreme, in its ways. Its body is long and slender, and its legs are comparatively short, and when stalking its prey its nose is thrust forward, the body elongated



A Genet (*Genetta tigrina*) about to spring at a Lourie or Plantain Eater (*Turacus corythax*).

THE GENET

to its fullest stretch, and the long tail held straight out along the ground behind. Creeping silently along in this attitude, with abdomen almost touching the ground, it has at first sight the appearance of a snake.

The food of the genet consists of any creature which it may be able to overpower, such for instance as hares, dassies, rats, mice, birds, their nestlings and eggs, as well as sundry lizards, snakes, eggs, and insects. In captivity they thrive best on a meat diet. In the vicinity of the stock farmer these genets are apt to become a pest, owing to their fondness for poultry. The head and body of the genet being so slender, it is able to squeeze through comparatively small holes. Where the head can go, the body can follow.

During my sojourn on a Dutch friend's farm we were, one morning, startled during breakfast by the excited ejaculations of a coloured servant woman. In a most excited way she related that when she was feeding the fowls she saw the remains of half a dozen hens on the floor, and on going into the fowl-house to investigate more closely, something hissed loudly and fiercely. She declared it was a huge snake. Arming ourselves with sticks, we proceeded to the fowl-house, and a glance showed us that some creature other than a snake had been there during the night, for the partially-devoured bodies of six fowls were ample evidence of the fact.

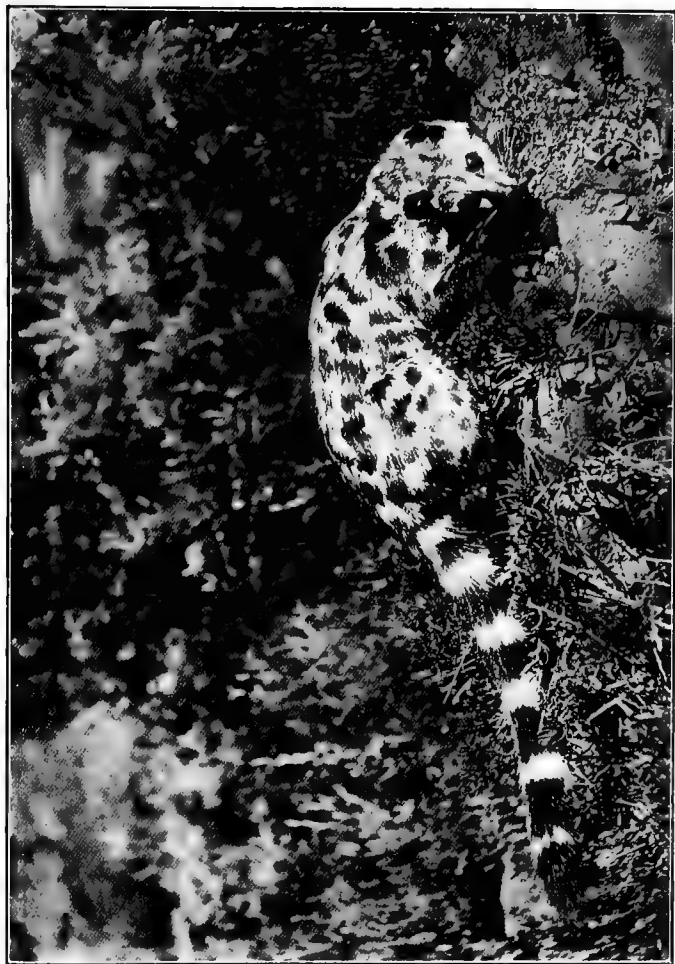
We stepped inside, carefully closing the door

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behind us. Peering into a nesting-box we were greeted with a succession of fierce hisses, and then an evil-smelling musky odour permeated the air. We at once recognised this as the fluid excreted by the genet. When this animal is brought to bay it excretes a viscid yellow fluid which is manufactured by a pair of glands under, and at the root of, the tail. This fluid is a negative weapon of defence, for the odour is so nauseating that most animals go off in disgust and leave the genet in peace.

Kicking the nesting box at the back, a pair of genets crept swiftly out and dashed for a small hole in the wall, through which they made frantic endeavours to pass. One managed to get its body jammed half way through, but could proceed no further, and my friend, stepping quickly forward, killed the animal, and presently did likewise with the other. It seems the hole through which the genets obtained entry into the fowl-house was just about sufficiently large to admit of their bodies, containing empty stomachs, to glide through ; but after dining not wisely but too well, their stomachs were too distended to allow of them again passing through the hole ; and so, finding themselves trapped, they sought out the darkest corner to await a reduction of their girth.

When chased from its lair by dogs and brought to bay, the genet seeks to intimidate its foes by hissing, erecting its fur, and discharging its vile-smelling secretion. When attempts are made to



The Large-spotted Genet (*Genetta tigrina*) popularly called a Misselyat-kat or Musk Cat. It has three rows of black spots on each side of its body, and the tip of its tail is black. An adult genet measures two feet from nose to root of tail.

THE GENET

seize it, the genet, however, fights fiercely with teeth and claws. The saliva of this animal apparently possesses some poisonous property, but this has not been satisfactorily demonstrated.

Several cases have been reported of men dying two or three weeks after being bitten by genets. In these instances it is stated that after being severely bitten on the hand or arm by a genet, the wounds healed satisfactorily, but subsequently violent and sharp pains radiated up the arm from the site of the bite into the shoulder, followed later by symptoms which seemed to resemble hydrophobia more or less. However, be this as it may, the fact should be recognised that wounds caused by the bites of enraged animals are particularly liable to become inflamed and set up a condition of blood-poisoning.

Therefore all such bites should be treated as poisoned wounds. If the wounds are slits, scratches, or gashes, then the cleansing and disinfecting process is simple, for in these instances they need only be thoroughly washed with a solution of permanganate of potash and afterwards liberally dusted over with boracic acid powder and bandaged. If, however, the wounds are deep punctures made by the canine teeth of an animal, they should be thoroughly syringed to the bottom with a weak solution of permanganate of potash or Condy's fluid. This can be done with an ordinary glass syringe.

When captured adult, the genet never loses

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its shyness, and is always more or less suspicious, even to those who feed it, and although after a long time it will allow itself to be stroked by its keeper, it is apt to bite without giving any warning. When taken into captivity in the kittenhood stage and kindly and gently treated and frequently handled, the genet will grow up as tame as any domestic cat. In fact, it is a common practice in the south of Europe for the peasants to keep tame genets in their houses instead of cats to destroy rats and mice. The genet can squeeze its body through comparatively small holes and crevices owing not only to its body being slender, but to the fact that its flesh, skin, and joints are so loose that they flatten and bend and offer little resistance when the animal desires to elongate itself.

We kept a live genet in the Port Elizabeth Museum, and one night it escaped. The following day the entire museum was searched without success. Every crevice and corner into which it was considered the genet might possibly have squeezed was probed. A few days later a friend happened to come to see me, and trotting behind him was a terrier dog. Suddenly the terrier became excited and began to snap and bark, sniffing at a crevice between a glass case and a side wall. Listening carefully we heard the genet hiss, and an assistant, getting on the top of the case, saw the animal lying hidden between the wall and the back of the glass showcase. The crevice through which it had

THE GENET

crept was so absurdly narrow that it seemed an utter impossibility for the genet to have pushed through it. When we killed the creature we failed utterly to push even a small portion of its body into this crevice. The head we managed to force in sideways, but the body wedged the aperture most effectually ; yet this genet had passed through the crevice several times, for traces of its presence were seen nightly on the museum floor, and the ration of meat left each evening had disappeared.

Genets inhabit the whole of Africa, and although one species which is found in Northern Africa extends into Spain, the South of France, and South-western Asia, the real home of the Genets is in Africa. In South Africa we have four kinds. They are as follows :

THE LARGE-SPOTTED GENET

(*Genetta tigrina*)

This species of Genet is found throughout South Africa in all situations which afford cover. It ranges beyond the Zambesi to Somaliland and Abyssinia. In fact, it is common all over Africa in the bush-veld, forests, and kloofs.

Several specimens of this species have been obtained in the neighbourhood of Port Elizabeth. It, however, is seldom seen, owing to its cunning, secretive, and silent ways, and the fact that it lies

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securely concealed by day and only issues forth in search of food by night.

This genet, when standing fully upright with legs straightened, is about eight inches in height at the shoulder. Its low stature is owing to the extreme shortness of its legs in comparison with its body, which measures two feet from the nose to the root of the tail, and the latter is eighteen inches in length. The body colour of the animal is grey, with a slight yellow tinge; a black stripe extends down the centre of the back from the shoulder to the root of the tail; the neck and shoulders are more or less marked and striped with black; the body is covered with squarish spots, the larger of which are over an inch in diameter, arranged in three rows running longitudinally. The long tail is ringed black and white, the black rings being the broader. The distinguishing difference between the Large-spotted Genet and the Small-spotted species is stated to be that in the former the tail tip is black, and in the latter it is white. This is by no means a constant guide, for several specimens of the Small-spotted Genet from the eastern part of the Cape Province which I have examined, have the tip of the tail black. The Large-spotted Genet, however, as its name implies, can easily be distinguished from the others because of the comparative largeness of the black body-spots, which are arranged in three irregular rows.



The Small-spotted Genet (*Genetta felina*). It differs from the Large-spotted Genet in having five rows of irregular black spots on each side of its body, and by the tip of its tail being white. Both species are popularly known as Misselyat-kats.

THE GENET

THE SMALL-SPOTTED GENET

(*Genetta felina*)

This species of genet is common throughout the Cape Province, and has been recorded as far north as Angola. Considerable numbers have been killed or captured in the eastern part of the Cape Province within the last few years. In the neighbourhood of Port Elizabeth over a dozen have been shot or trapped within the past couple of years and sent to the museum.

The Small-spotted Genet can be identified by its spots being smaller than those in the preceding species, and instead of being in three rows, as in the Large-spotted Genet, the black spots are in five and sometimes six irregular rows. The tip of the tail is stated to be white, but this is not constant. In some it is white, in others black. The difference between the two species is not recognised by colonists, and both are known as the Muskat or Misselyat-kat.

THE SENEGAL GENET

(*Genetta ludia—senegalensis* of Sclater)

The Senegal Genet is an inhabitant of the western portion of Africa, and has been found as far south as the Kalahari; therefore it is included

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among the animals inhabiting Africa south of the Zambesi and Cunene Rivers. It resembles the Small-spotted Genet, but instead of the spots being black as in the latter, they are of a rusty brown colour.

RUSTY-SPOTTED GENET

(*Genetta rubiginosa*)

This species of genet was originally recorded from the vicinity of Cape Town, and has since been found to occur as far north as Angola. It must be common in Bechuanaland, as its skin is often found in karosses made in that country by the natives. Karosses are rugs made of the softened skins of animals with the hair left on. This species of genet can be distinguished by its body and legs being greyish-white with a red tinge. The stripe down the ridge of the back, and the spots on the body, are brick-red, except the lowest row, which are blackish. The tail at the root has usually four reddish rings, followed by four or five black ones. The tail tip is black for a greater length than in any of the other species. This black tip is formed by two or three of the black rings merging together.

The four species of Genets are of the same average size.



The Small Grey Mongoose or Grijse Muishond attacking a Ringhals Cobra or Spitting Snake (*Sepedon hamachates*).

THE MUNGOOSE

THESE curious civet-like animals were formerly known as ichneumons. The first species which came under the notice of naturalists was the Egyptian ichneumon, otherwise called Pharaoh's Rat. It was a familiar animal to the ancient Egyptians four thousand and more years ago, and was held sacred by them. Its form may be seen depicted on their frescoes.

However, when many other species or kinds of ichneumons were discovered it was decided to abandon the name ichneumon and substitute Mongoose, which is the native Indian name for a species inhabiting India. The true mongooses all have long, tapering bodies and tails, and their faces are acutely pointed. There are a large number of kinds of these animals. They inhabit nearly the whole of Africa and extend into Spain, and eastwards through the southern parts of Asia. The habits and ways of the various species differ but little. They are all cunning and secretive, yet bold and predaceous, preying upon small animals, birds, reptiles, and insects. When hard pressed for food they resort to berries, fruits, roots, herbs, &c.

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Although they, at times, ascend trees when the trunks are sufficiently sloping, the mongooses are terrestrial by habit. I have frequently seen them spring from the ground on to low branches and run along them in the most active and confident manner, seeking for birds' nests, tree lizards, and caterpillars. The claws of the mongoose are not sharp, and the pads of the feet are not provided with any powers of suction as is the case with the Tree Dassie (*Procavia arborea*); therefore they are unable to climb perpendicular trunks of trees.

A great deal has been written about the combats of mongooses with venomous snakes, and the immunity of these animals to the venom of snakes. I had occasion to experiment upon certain of the South African species with snake venom, and found that they were not immune, as generally supposed. However, like most of the cat-tribe of animals, they are very tenacious of life, and the venom always took much longer to kill them than was the case with most other animals of the same size. For instance, a rabbit twice the size of a mongoose (*Mungos pulverulentus*) after the subcutaneous injection of Cape Cobra venom died in fifteen minutes. The mongoose, on the contrary, after the injection of a similar dose showed symptoms of poisoning, but recovered. The mistake which most experimenters fall into is that they gauge the dosage of venom according to the weight of the animal, under the supposition that it produces certain

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effects per pound of weight, or, as it is usually reckoned, per kilogram. This is not a true guide, as the various species of animals differ considerably in their natural inherent powers of resistance to snake venom. The domestic cat or mongoose, for instance, can survive a dosage of venom which would kill any rabbit, fowl, turkey, or goose.

All the species of mongooses are determined enemies of snakes. In fact, they constitute the chief enemies of these noxious reptiles. They not only boldly attack and destroy adult snakes, but they also prey largely on their young and eggs. The latter are devoured in large numbers, as their whereabouts is easily discovered by the mongoose, whose powers of scent are acute.

There are several kinds of mongooses in South Africa. The average farmer shoots them at sight, and if asked why he does this, he replies that they are poultry thieves. The sportsman is also a sworn enemy of the mongoose, because it levies toll upon game birds, their eggs, young, and small game animals such as hares. Now, let us reason the matter out. A farmer, finding that one or more mongooses in his neighbourhood are in the habit of stealing his eggs and chickens, is justly indignant, and regards the mongoose as an enemy. In this instance he is perfectly justified in hunting them down with dogs or otherwise destroying them. Indeed, if he did not he would be a very careless and easy-going man.

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It must be carefully borne in mind that there are comparatively few of our animal friends which are not, under certain circumstances, harmful to us. The mongoose is a carnivorous animal, and whatever is good for food in its neighbourhood is commandeered.

However, even when living in proximity to man, the mongoose, as a rule, does comparatively little mischief, for it is timid and shy, and has a wholesome dread of the human animal and his dogs. When pressed by hunger it becomes increasingly bold, and will, under cover of darkness, steal into the fowl roosts and play havoc with the poultry. The sportsman is an enemy to the mongoose for the reason that it preys at times on small game birds and game animals. From an economic point of view the sportsman's grievance against the mongoose does not count for much. It is true most species of game birds perform a service to man in devouring noxious insects and seeds of weeds, and the mongoose is one of the natural enemies of these birds for the purpose of keeping them from multiplying unduly and becoming a plague to man, for most of the species of game birds also devour with avidity the seeds sown by the farmer, as well as his ripening corn, besides eating off the tender plants as they push their heads above ground. The hare, if allowed to unduly increase in numbers, would become a decided pest. It renders man no service at all. On the contrary,

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it devours his crops and pasturage. Therefore it must be admitted the sportsman's antipathy to the mongoose is a selfish one, for the creatures which he seeks to reserve the sole right of killing are, with but few exceptions, not only of no economic value, but are a decided hindrance to the agriculturalist and stock farmer. In South Africa we have little or no pasturage to spare for the maintenance of wild animals useless to man. What is not required for the grazing of stock is urgently needed to clothe the veld and hills, to suck up the rain and prevent it carrying the fertile soil with it into the river beds, and eventually to the sea. In various indirect ways vegetation affects the rainfall, and in a country like that of South Africa, suffering from a chronic condition of thirst over at least one-half of its area, the matter of the conservation of water and vegetation is important.

Mongoose in their native haunts, away from the vicinity of man, do a small amount of harm in occasionally eating the eggs and young of useful insectivorous birds which build their nests on the ground or in low bushes. This, however, is a thousand times compensated for by the mongoose, as it devours the creatures which are inveterate enemies of bird life. Mice, rats, and snakes, which destroy vast numbers of the eggs and young of useful birds, are killed and eaten by the mongoose. The nests of birds are perfectly safe from the mongoose when they are in trees, steep banks, and in

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the sides of kloofs; but the rat is an excellent climber, and few bird's nests are safe from its attacks. Again, the tree snake's diet is principally the eggs and young of birds, and if these species of snakes should be allowed to increase unduly in numbers, the insectivorous birds, which are absolutely essential in the economy of Nature, would become almost extinct. The mongoose, it is true, cannot pursue these snakes in their haunts among the branches of trees, but it seeks out and devours the eggs, which are usually deposited in crevices amongst the roots of trees, under decaying leaves, or brushwood, or in holes. Not a few of these destructive tree snakes fall victims to the mongoose when they descend to the ground, as they frequently do in search of food, or to bask in the sun's warm rays, and to absorb the heat from the sun-baked earth. Mice and rats, however, constitute the mainstay of the diet of the mongoose, and it should be borne in mind that there are a considerable number of species of rats and mice native to this country, as well as others which have been introduced, such as the common barn rat and house mouse. Rats and mice rear several families annually, consisting of from five to ten at a brood. They begin breeding at an early age, and the progeny of a single pair of rats in a few years, if allowed to breed unchecked, would amount to many millions. Rats and mice have no redeeming qualities, so far as man is concerned. True, they eat insects at times, but



Mimosa Thorns.

The typical native bush of South Africa is commonly known as the Mimosa. It sometimes grows in isolated situations, but more usually in clusters and dense thickets. Every twig is armed with sharp-pointed thorns from an inch to three inches long. They stand out at all angles. Such thickets afford the finest of cover for the mungoose and a host of other animals.

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the majority of these are beneficial to man, for they are the carnivorous beetles which prey upon a variety of insect pests. The staple food of rats and mice is various kinds of vegetable substances. Standing crops are ravaged, and when the grain is stored away they voraciously attack and devour it. Young, tender plants are eaten off, the bark of fruit trees gnawed, and the buds, flowers, and fruit eaten. Chickens, the young of domestic pigeons, and even baby ostriches are attacked and killed ; and barns and dwelling-houses are overrun with these destructive rodents ; and infectious diseases are spread by them. Bubonic plague, we know, is spread by a flea which lives upon the rat, and which obtains the bacteria which cause the disease from the blood of its host. Enteric fever is another deadly disease which is spread about the community by rats which devour the infected material and get their bodies smothered with the microbes of the disease.

Some species of rats and mice do not haunt the homesteads of man ; they live in the bush-veld, karoo and grass-veld, but even there they do much mischief in eating up useful vegetation and devouring vast quantities of seeds which would have otherwise grown into plants to nourish the flocks and herds of the farmer, in addition to the eggs and young of birds and useful carnivorous beetles.

Then, again, we in South Africa are subject to periodic plagues of migratory locusts which invade

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our lands in countless swarms. These locusts are dainty food for the mongooses, and while they are plentiful they live almost exclusively on them. Mongooses which I kept in captivity in Natal preferred locusts to any other form of diet. Swarms of injurious caterpillars, termites, and other creatures which are a pest to man are swept out of existence by the mongoose. Thus does the active and alert mongoose render the most valuable of services to the human race, and it therefore behoves us to exercise the greatest of discretion in the destruction of this animal friend, which may at times forfeit its right to live by reason of its occasional depredations in the poultry yard. When the mongoose becomes a poultry thief then by all means destroy it; but when it is met with out in its native habitat away from the abode of man, then leave it alone, else the balance of Nature may be upset, and retribution may fall upon the destroyer. The sportsman farmer who keeps no small stock such as poultry, but who desires to encourage the breeding of game birds on his estate, is quite justified in destroying the mongooses on his land, but he has no moral right to publicly proclaim this little animal to be a pest and a nuisance to man generally.

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THE LARGE GREY MUNGOOSE

(*Mungos cafer*)

Syn.: *Herpestes cafer*

Also known as the Grijse Muishond ; Kommetje-gat-kat ; Black-tailed Mongoose ; Kafir Mongoose ; Umvuzi of Amaxosa ; Mvunti of Swazis.

The Large Grey Mongoose is so called because it is of comparatively large size, and is speckled, the predominating hue being grey. This mongoose inhabits Africa from the Cape to the southern borders of the Sahara. It is found in all parts of South Africa, but is nowhere actually abundant. It is most frequently met with in the more or less wooded districts where the rainfall is plentiful, which is mainly on the eastern side of South Africa. In Natal I often saw it in my wanderings in the bush-veld. For the twelve years I was at the Natal Museum we received an average of five or six annually from the districts around Pietermaritzburg.

It is a shy and secretive animal, hiding as a rule by day and venturing forth at sundown and during the night. In quiet, secluded localities it ventures forth at all times of the day, but in the vicinity of man it is strictly nocturnal, for it has a wholesome fear not only of him, but his dogs. Its favourite hiding-places are clefts and crannies in rocks, down the deserted burrows of other animals, and in dense

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thickets. A favourite lair is in the midst of a dense thorny mass of scrub. This mongoose is easily hunted out of its lair by terrier dogs and killed. When attacked and overtaken by dogs it seeks to intimidate them by snapping and giving vent to a hissing, spitting sort of growl. It offers a very feeble resistance, and can easily be killed by an experienced fox terrier.

I have frequently seen these mongooses, either singly or in pairs. They usually haunt the bushveld, rocky shrub-covered hillsides, and margins of forests. They were, at one time, common in a dense but small native forest known as the Town Bush, near Pietermaritzburg, from the cover of which they issued forth on moonlight nights or at dawn, and levied a heavy toll on the poultry of the residents of the Town Bush Valley.

The hair on the back of this species of mongoose is rather long, and when alarmed the animal erects it, which gives it the appearance of being double its actual size. Many species of animals, including our domestic cat, have the power of erecting the fur of their backs and tails for the purpose of intimidating enemies, by appearing to be more formidable than they in reality are. The fur of the Grey Mongoose is short on the head, but gradually gets longer towards the tail, where it is about four inches in length. The colour at a first glance is grey, but on close inspection it will be noticed that each hair is narrowly ringed black and white, which



The Large Grey Mongoose (*Mungos cafer*). Also known as the Grijse Muishond and Kommetje-gat-kat. It is two feet long, not including the tail.

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gives the animal its grey appearance. The nose and face up to the eyes are black; the limbs are dark, growing blacker towards the toes, which are nearly black. The tail is long and tapering, the hairs of which are long at the root, but gradually grow shorter towards the tip, which is provided with a brush of long black hairs, giving rise to the name of Black-tailed Mongoose, by which it is known to many colonists. The black tuft on the end of the tail, and the large size of the animal, serve to distinguish it from all others of its kind in South Africa. There is another mongoose of equal size, but its tail tip is white, and it cannot therefore be confused with this species.

The average length of the Large Grey Mongoose from the tip of the nose to the base of the tail is about two feet, and the tail eighteen inches.

THE SLENDER MUNGOOSE

(*Mungos caai*)

Syn. : *Herpestes gracilis*

The Slender Mongoose varies a good deal in colour, which fact caused it in the past to be divided into two or three sub-species. It is found in the eastern parts of the Cape Province, Pondoland, Natal, and northwards to Abyssinia and Cape Verde. It evidently does not occur to any great extent in the eastern part of the Cape Province, as it is quite unknown at Port Elizabeth, and we

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so far have failed to obtain even a single specimen from any of the districts in this neighbourhood.

The Slender Mongoose is nowhere common in South Africa. I have occasionally met with it in the thorny scrub in rocky situations near Pietermaritzburg and Howick, in Natal, and in the eastern part of the Transvaal.

As its name implies, this mongoose is slender in shape, and it is also small in size. The prevailing colour is greyish-brown with a yellow tinge. Each hair is annulated, or narrowly ringed black and reddish brown, or dull white. The tail is of the same colour as the back, and is provided with a tuft of black hairs which project from one to two inches beyond the tip. The black tuft of hairs on the end of the tail of the Great Grey Mongoose is considerably larger than on this species, and each hair is three to four inches long. Moreover, the Slender Mongoose is of small size, and the other is large and robust in comparison, therefore it is impossible to confuse the two.

A local race occurs in the Transvaal, and is known as *Mungos caayi Swinnyi*.

THE RUDDY MUNGOOSE

(*Mungos ratlamuchi*)

Syn. : *Herpestes gracilis badius*

The Ruddy Mongoose inhabits the drier parts of South Africa. Specimens have been obtained

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from Bechuanaland, the Kalahari, and from Upington on the Orange River. It is stated to range as far north as Zanzibar.

This mongoose is shy and secretive, darting instantly into cover when alarmed. It is invariably found in localities covered with scrubby bush and undergrowth. The rock-strewn, vegetation-covered, low hillsides are favourite haunts of this graceful little creature. It devours rats, mice, reptiles, &c., like other South African mongooses, but when termites ("White ants") are plentiful it subsists almost entirely upon them. The termites are secured by scratching a small hole in the side of the termite hill, and when the inmates swarm into the breach they are carefully licked up with the tongue. In many of the more barren districts in which this species of mongoose is found, rats, mice, and reptiles are scarce, or actually non-existent, and in these instances the Ruddy Mongoose lives exclusively on termites, ants, beetles, and various larvæ. When a sufficient foothold is obtainable, it ascends trees in search of birds' eggs and young.

This mongoose is bright rufous in colour, and the tip of its tail is black. The fur is not annulated. The average length is a foot from the tip of the nose to the base of the tail. The tail is slightly shorter than the body.

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THE WATER MUNGOOSE

(*Mungos paludinosus typicus*)

Syn. : *Herpestes galera*

Also known as the Zwarte Muishond, Bruin Kommetje-gat-kat ; Ivusi of the Amaxosa.

The Water Mongoose is common throughout South Africa, and extends north as far as the Equator. Unlike its South African cousins, it is an aquatic animal, and is never found far from water. The reeds and rushes on the margins of lakes, rivers, ponds, and marshes are its haunts. Although its feet are not webbed, it is an expert swimmer and diver, rivalling the otter in this respect. When hunted from its lair by dogs, it at once takes to the water, and is with difficulty caught. When hard pressed it often resorts to a clever and effective manœuvre to outwit its pursuers. Diving down amongst the water weeds, rushes or reeds, it keeps its body completely immersed, the tip of its nose only appearing above water. One evening about sundown on my estate in Natal I surprised a Water Mongoose in a pond which had formerly been a clay pit. There was no cover in the shape of rushes or water weeds, with the exception of a few isolated tufts of watergrass near the margin. After swimming about and diving repeatedly, the mongoose suddenly vanished. I carefully watched for several minutes, but it failed to appear. I sat down, de-



The Water Mongoose (*Mungos paludinosus*). Known to colonists as the Zwart Muishond or Bruin Kommetje-gat-kat. It inhabits the reedy banks of rivers, marshes, and ponds.

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terminated to keep a sharp lookout for half an hour or so. My pointer dog was equally puzzled, and began sniffing round the margin of the pool. Presently he stopped, became rigid and "pointed." His eyes were riveted on what seemed to me to be the end of a dead twig, barely above the level of the water. The dog's head slowly, almost imperceptibly sank, and then with a rapid movement it thrust its nose under the water. Next instant there was a great commotion. The pointer dog and a large dark object were struggling and tumbling over in the shallow water. Presently the dog, with much difficulty, dragged the Water Mongoose to the bank, gripping it firmly by the neck. What I took to be the end of a dead twig was the nose of the mongoose. Its body was invisible to me in the muddy water, but the keen eyes and powers of scent of the dog enabled it to locate the creature.

In the Mooi River in Natal a pair of Water Mongooses became a pest, they having forfeited the right to live by reason of their thefts of poultry. Half a dozen fox terrier dogs were got together, and a hunt was arranged. After searching the reedy bank of the river for some time, a mongoose was chased from its lair. It was headed downstream, where the banks were free from vegetation. After diving repeatedly the animal swam to the centre of the stream and awaited the attack. A venturesome terrier, bolder and more active than the others, swam ahead and tackled the mongoose. The two

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closed, and a fearful struggle took place. When the other terriers had almost reached the site of the battle the mongoose succeeded in gripping the terrier by the throat, and the two sank from sight. In about a minute's time they reappeared some yards further downstream, but almost instantly vanished. Nothing more was seen of them that day. Visiting the river late the following afternoon, the bodies of both combatants were seen floating near the bank. The grip of the mongoose had not relaxed. In death its jaws were rigid, and its canine teeth buried deep in the throat of the dog. This mongoose proved to be an old male.

I have frequently kept these Water Mongooses in captivity, but unless caught very young they are apt to be suspicious, and snap at the fingers when attempts are made to handle them, even after being a considerable time in captivity. If taken into captivity when small, all species of South African mongooses may be rendered almost, if not quite, as tame as domestic cats. They never, however, lose their natural suspicious, secretive, nervous nature, and the sudden appearance of a stranger or some domestic animal with which they are not familiar, or any sudden unusual noise, will send a tame mongoose into a frenzy of fear, and it will steal swiftly off with body elongated, and crouching low, to the darkest and quietest retreat, and lie hidden for hours.

A Water Mongoose which I had recently cap-

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tured was kept confined in a large aviary. Into this I threw a live Puff Adder. The mongoose, with a succession of low growls and grunts, ran swiftly into a corner and faced the snake. Presently it began snapping at the reptile, taking care to keep well beyond striking distance. Tiring of this manœuvre, it leaped over the snake, ran three or four times round it, with its beady-black shiny eyes all the time intently watching every movement of the reptile. Eventually perceiving the snake to be at a disadvantage, it sprang upon it, and next instant, with a backward spring, it was out of reach of the serpent's formidable fangs. There was not much need for the precaution, for it had so severely crushed the head of the snake that it was physically incapable of biting. Carefully watching the reptile for about ten minutes, the mongoose ran at it again, seized its head, and this time, instead of nipping and letting go, it deliberately chewed the head from the body and swallowed it. Then it leisurely ate a portion of the body, and the remainder the following day. This mongoose eventually died of snake-venom poisoning in rather a curious way. After maiming a Puff Adder it chewed up and swallowed the head, as is usual with the various mongooses; but an hour or two after doing so it began to grow sluggish in its movements, and its eyes lost their sheen and grew increasingly dim and deep-set. It died in about ten hours after having eaten the snake's head.

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I held a post-mortem, and found that it had died of snake-venom poisoning. Its stomach was badly congested, and extensive hæmorrhage had occurred therein, and in some adjacent tissues. Now, what evidently occurred was that the mongoose only slightly chewed up the head of the reptile before swallowing it, and the spasmodic working of the snake's jaws had driven one or both fangs into the wall of the stomach, the venom being at the same time discharged from the glands into the cellular tissue, and thus got direct into the blood stream. Snake venom when swallowed is digested like ordinary albuminous foodstuffs, and therefore does no harm. It is poisonous only when it gets into the blood stream unchanged.

A Water Mongoose, which a friend had at Port Elizabeth, gave birth to two young ones in the month of August. The mother kept them in a nest of grass in a dark corner of the cage. When they were old enough to leave the nest she showed the greatest anxiety for their welfare. When anyone approached the cage she quickly pushed the little creatures out of sight amongst the fur between her hind legs, and faced the intruder in a menacing attitude, ready to sacrifice her life in defence of her babies.

The natural diet of the Water Mongoose consists of almost any species of living creature it is able to overpower. When food is abundant in and near water, they seldom venture far from their



A pair of Water Mongooses and their little family, amidst the rushes and grass on the bank of a river.

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waterside retreats, being content with a diet of frogs, crabs, fish, water snakes, aquatic insects, and the eggs and young of aquatic birds.

In Natal, Zululand, and the Eastern Transvaal there is an animal which attains the bulk of an adult rabbit, known as the Cane Rat (*Thryonomys*), which haunts the reedy banks of rivers, ponds, and marshes, as well as the neighbouring lands. The Water Mongoose is an inveterate enemy of these Cane Rats, for their flesh is a welcome addition to its diet. This Cane Rat is a rodent or gnawing animal, and is exceedingly destructive to sugarcane, and the crops of the farmer, especially the mealies, the stalks of which it gnaws in order to feast upon the unripe milky grain. Therefore, the Water Mongoose, by preying upon this animal, renders man a considerable service. When the various creatures on which it preys, near its haunts on the margins of marshes, ponds, and watercourses, are insufficient for its needs, as is often the case, the Water Mongoose forages around in the neighbourhood and levies a heavy toll on rats, mice, snakes, and noxious insects. Should locusts be available, it devours them with avidity. If this mongoose lives in proximity to man, however, and its natural supplies of food should be insufficient, it causes him much soreness of heart and bitterness of feeling, by its attacks on his poultry, which are carried out under cover of darkness. A farmer at whose homestead I often stayed in Natal had

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suffered losses of poultry at intervals for a year or more. Thinking that wild cats caused the damage, he set poisoned bait and traps, but without success. One night a half-grown turkey was killed and partly devoured. Recognising the spoor as that of a mongoose, we decided to lie in ambush just before dawn, as I predicted the animal would return just after daylight when the poultry came down from their tree perches. I was aware a mongoose could not have climbed after them, so naturally the inference was that it had been in the habit of surprising them at daylight. This proved to be so, for presently we heard a sharp, suddenly stifled cry from a fowl, and saw a struggling hen whose neck was in the jaws of a Water Mongoose. Needless to say the mongoose did not live to witness another dawn. After we had finished our breakfast we summoned all the farm hands and dogs and proceeded to the adjacent river (Umsindusi), and eventually succeeded in killing another, presumably the mate, as well as three half-grown specimens.

From glands situated under the tail the Water Mongoose, when alarmed or seized by an enemy, excretes a fluid which has what might be called a sweetish, nauseating odour, something akin to the combined odour of musk and putrid cabbages.

In the neighbourhood of Port Elizabeth this mongoose is common. One was actually captured in a patch of scrub near the spruit known as Baaken's River, where it flows through the town to



The Small Grey Mongoose, or Pepper and Salt Cat (*Mungos pulverulentus*), which inhabits the bushy parts of the Cape and Natal. It is about fourteen inches long from the nose to root of tail.

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the sea. At Despatch, near Port Elizabeth, Mr. F. H. Holland has recently killed two of these mongooses, which for some time had been preying on his poultry. This spot is an ideal habitat for them, as the banks of the Zwartkops River are thickly covered with reeds.

The Water Mongoose is dark brown in colour : the hairs are annulated with bands of brown and yellow alternately, the former being most pronounced. Often these annulations are absent. The animal is rather thickset, especially the head and neck ; the limbs are of a darker brown than the body fur ; the tail is a little more than half the length of the body, which averages two feet from the tip of the nose to the root of the tail. The hair of the tail is long at the base, but gradually grows shorter towards the tip, giving the tail a tapering appearance.

On the north-eastern side of South Africa, from the Transvaal, and up the east coast, a local race is found, which is larger than the typical kind, and to distinguish it from the typical race, it is known as *Mungos paludinosus rubellus*.

THE SMALL GREY MUNGOOSE (*Mungos pulverulentus*)

Also known as the Grijse Muishond ; Neethaar ; Pepper and Salt Cat ; Ilitse of Amaxosa

The Small Grey Mongoose is common throughout the Cape Province and Natal, but so far as is at

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present known it does not inhabit any other parts of South Africa.

This mongoose is an alert little creature; crisp and quick in its movements. Its favourite haunts are the bush-veld and rocky vegetation-covered hillsides and valleys. In fact, wherever there is a sufficiency of natural cover and an abundance of rats, mice, and insects, there you will in all likelihood find this mongoose. They are invariably seen in pairs, and unlike most of their cousins, they may be seen abroad by day as well as by night. They love to bask in the sunshine in the forest glades, on beaten tracks, and other exposed situations. When alarmed they instantly steal off at a rapid trot into cover, with body elongated and head lowered. When very much frightened they gallop off at a rapid pace. I have frequently sat concealed in some dense scrub and watched these graceful little creatures at work and at play.

So closely does the coloration of their fur blend with that of their surroundings, and so noiselessly do they creep along, that the rats and mice on which they so largely feed are easily captured. Ground birds, their eggs and young, form a welcome addition to the diet of this mongoose; and insects are at all times devoured. The common grasshopper is a favourite food, and when the Migratory Locust is abundant it is greedily devoured.

The only harm which this little mongoose does to humanity is by reason of its fondness for chickens.

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As a general rule it will not molest full-grown fowls, but when pressed by hunger it will not hesitate to attack them, and should it enter a fowl-house at night it will probably slay several, eating a little of the flesh of each. However, I have frequently stayed at farm-houses where these mungooses were common in the neighbourhood, and unless chickens strayed near their leafy haunts, they were not molested. Should there be an abundance of cover in the shape of undergrowth, thick scrub, and rocks in the immediate vicinity of a farm-house, then the poultry are never at any time safe, if any of these mungooses should be about, unless the poultry are enclosed in wire-mesh runs.

In the neighbourhood of Port Elizabeth this mongoose is common, and may be seen at any time of day on the roads, railway track, and on the broad fire belts which intersect the demarcated forest. Occasionally chickens are snapped up when their owners allow them to wander amongst the bush. A mongoose of this species will rarely venture far from cover, for it has a wholesome fear of dogs, and knows full well that if surprised out in the open by a dog it can easily be overtaken, and, although it fights to the death, it is no match even for a terrier. People living in the vicinity of the town who keep their fowls in wire-netting enclosures, never lose any from the attacks of these mungooses, although they may inhabit the adjacent scrub.

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At Perseverance, near Port Elizabeth, Mr. J. Martin, a farmer who incubates large batches of chickens, was in the habit of keeping them during the daytime in camps, or runs enclosed with a low fence of wire netting. One day a pair of mongooses got through the wire and deliberately slaughtered eighty chickens before they were disturbed.

However, apart from occasional inroads on poultry, the Small Grey Mongoose fulfils a most important mission in the economy of Nature, for of all creatures it is the most persistent in its pursuit of rats, mice, and noxious insects, and for these reasons it should not be molested, except, of course, when it is known to be in the habit of preying on poultry.

From the sportsman's point of view it is not an altogether desirable animal to have on game preserves where partridges and other game birds are being bred, for it supplements its diet of rats, mice, snakes, and insects by eating the young and eggs of these game birds. Game birds, however, do not usually build their nests near the favourite haunts of this mongoose, and it must be borne in mind that it destroys vast numbers of rats, and not a few snakes, which are themselves great destroyers of the eggs and young of both ground and tree-frequenting birds. Again, it might be argued that game birds are of comparatively little value in the economy of Nature, so far as man is concerned. Indeed they are in many instances a



A pair of Small Grey Mongooses with young.

The Small Grey Mongoose (*Mungos pulverulentus*) lives in pairs and is common in the bushlands of the Cape and Natal. They are the finest rat, mouse, and snake killers in the country.

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positive pest to the agriculturalist. For many years I have kept these little mongooses in captivity. They make nice interesting pets, but they will seldom allow themselves to be touched, and when their suspicions are aroused they will snap viciously at the fingers.

When captured very young and handled daily they become perfectly tame, but will not allow a stranger to approach.

The sight of a strange dog at all times makes them wild with terror.

I kept a mongoose for a considerable time in a large wire-netting enclosure, to observe its ways. Whenever it heard a strange sound it stood straight up on its hind legs, peering in all directions from the trunk of a tree which was fixed in its cage. This tree sloped sufficiently for the mongoose to be able to run up it, which it frequently did. In fact it spent most of its time perched on the top of the tree trunk. Its food, which consisted of raw and cooked meat, was always carried up the tree, piece by piece. It disliked its food getting contaminated with dirt, and on picking up a mouthful it would shake it vigorously. If a live rat was introduced into the enclosure, escape was hopeless, for the mongoose was upon it in an instant.

Several times I introduced Puff Adders into its cage, and in each instance it succeeded in killing them. The head was always chewed up and swallowed first, then the appetite was satisfied on

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a portion of the body, and the remaining part was eaten the following day. I tested several of these Small Grey Mongooses by injecting them subcutaneously with snake venom. Although they proved to be strongly resistant to the action of the poison, yet if a dose capable of killing a cat was injected, the mongoose would die. Most of the species of carnivorous animals resist the action of snake poison strongly. For instance, a dosage of Boomslang (*Dispholidus typus*) venom which killed a large fowl in ten minutes, and a rabbit in fourteen minutes, took three days to kill a domestic cat.

In the wild state the lair of this mongoose is in the midst of masses of thick tangled brushwood, in crevices amongst rocks, down the deserted burrows of other animals, in hollow logs, and amongst the branches of low trees. They cannot climb up perpendicular tree trunks, but can easily run up them if the trunk slopes sufficiently. When the branches are low the mongoose has no difficulty in springing up and thus ascending the tree. When once among the branches they run nimbly about, seemingly quite secure. In the hollow interior of an old forest tree we discovered a pair of Small Grey Mongooses and their young ones. They reached the aperture by running up an adjacent tree, the trunk of which was sloping, and then along a branch which almost touched the hole which communicated with the hollow interior of the tree in which they made their home.



The skull of the Small Grey Mongoose, showing its formidable array of teeth. (This illustration is natural size.)

THE MUNGOOSE

In form this mongoose is rather slender. The body, from the tip of the nose to the root of the tail, averages twelve to fourteen inches ; the tail is ten to eleven inches. The colour of the fur of the body is speckled grey, caused by the hairs being banded or ringed black and white. The legs are dark brown ; eyes brown.

THE PALE MUNGOOSE

(*Mungos punctatissimus*)

The only known specimen of this mongoose was obtained at Port Elizabeth by Dr. Brehm, a German naturalist, and is at present in the collection of the Leyden Museum. It is stated to be very closely allied to the Small Grey Mongoose, differing only in its lighter colour and its smaller size.

Although I have lived at Port Elizabeth for the past ten years and done my utmost to obtain examples of this mongoose, I have failed. Considerable numbers of Small Grey Mongooses have been sent to me at the museum ; and I have observed scores of them disporting themselves in the warm sun's rays near the town. An animal dealer in Port Elizabeth for many years past has procured mongooses from this neighbourhood, and I have taken care to inspect them regularly, but they were all of the typical species, viz. *Mungos pulverulentus*. It is highly probable that the speci-

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men obtained by Brehm is simply a Small Grey Mongoose somewhat lighter in colour and smaller in size than usual. Unless other specimens are forthcoming soon, I consider the Pale Mongoose should be erased from the list of South African mammals.

WHITE-TAILED MUNGOOSE

(*Mungos albicauda*)

This large mongoose occurs in South Africa in the eastern part of the Cape Province, and throughout Natal where it is common, and thence northwards to Rhodesia, and on upwards along the eastern side of Africa to Abyssinia, and across to Guinea on the west coast.

The White-tailed Mongoose is an inhabitant of the bush-veld, rocky scrub-covered valleys and hillsides, and the outskirts of forests. I have never yet found it far from cover such as that afforded by the patches of thick scrub found on the bush-veld. In Natal it used to be common in the neighbourhood of Pietermaritzburg, in the adjacent Town Bush, from whence it ventured at night and preyed upon the poultry of the residents in the neighbouring valley. In secluded localities where there is little or no danger of it being surprised by man or his dogs, this mongoose issues forth during the afternoons in search of food, but is strictly noc-

THE MUNGOOSE

turnal otherwise, and never ventures from cover before dusk.

It makes its lair in crevices amongst the bush-covered rocks, and in the midst of dense masses of scrub ; in holes amongst the roots of forest trees, and sometimes down the deserted holes of the Aard Vark.

Although when brought to bay they make a desperate resistance, yet they are easily overcome by dogs and killed. They are frequently caught in baited spring traps, and are often destroyed by poisoning meat and laying it near their haunts. The difficulty, however, is to discover the locality of the lair, for when these animals take to poultry thieving they become very cunning. I have seen them chased by dogs into some neighbouring dense bush or rocky bush-strewn krantz, but on these places being thoroughly hunted through with a pack of dogs the following day, no sign of the animal could be obtained, but often on proceeding across a hill to another bush half a mile to a couple or more miles away, the thief would be discovered.

One night three turkeys belonging to a friend were killed and partly devoured. We poisoned the remains of one with strychnine, and with the aid of his dogs, the following day he found the dead bodies of a pair of White-tailed Mongooses which had been gripped by the poison and died on their way back to their lair, a distance of some three hundred yards from the dead turkey. When

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caught young and treated with gentleness, this mongoose soon becomes tame and allows itself to be freely handled. If, however, it is a quarter or half-grown before being taken into captivity, it never altogether loses its dread of man, and when attempts are made to caress it, the creature will snap viciously at the fingers.

The diet of the White-tailed Mongoose is similar to that of other species, viz. rats, mice, reptiles, and insects. It also preys on Klip Dassies or Rock Rabbits, Cane Rats, and young hares, as well as game birds, their young and eggs. When the Migratory Locust is abundant it lives almost exclusively upon it, and waxes fat. In the neighbourhood of man this large mongoose is invariably a pest, as sooner or later it becomes a poultry thief ; but away from the habitations of man it fulfils its mission in life to the full by doing its share in reducing the number of destructive rodents and harmful insects. It is a most useful animal to have on sugar plantations, for it will keep in check or actually exterminate those destructive rodent animals known as Cane Rats or Ground Pigs.

The White-tailed Mongoose attains a comparatively large size, averaging a couple of feet from the nose to the root of the tail. The tail is about a foot and a half in length.

The general colour of the fur is blackish grey. The longer hairs are ringed black and white, the tips being black. The tail is bushy from



The White-tailed Mongoose (*Mungos albicauda*). It can be distinguished from all others by its tail, which is white for two-thirds its length. It is a large mongoose, being two feet in length from the nose to root of tail.



The White-tailed Mongoose, showing its long bushy white tail by which it can be distinguished from all the other species.

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base to tip. From the root it gradually assumes a white colour, and for half its length it is pure white. This white tail is not constant in all individuals of this species. I have examined a few in Natal in which the tips of the hairs of the tails were black, giving the animal the appearance of having a blackish tail. The Large Grey Mongoose is often confused by the public with this species, but a glance at the tail is sufficient to distinguish it, as in the former the tail is bushy at the root, but tapers rapidly towards the tip, which has a tuft of black hairs.

WAHLBERG'S MUNGOOSE

(*Helogale parvula*)

This little mongoose differs so greatly in the shape of its skull, and the number and form of its teeth, that it is placed in a different genus (*Helogale*) to the foregoing species or kinds, which are all grouped under the genus *Mungos*. Wahlberg's Mongoose is found in bushy localities in Natal, but is rather uncommon. There are two species, the other being known as *Helogale brunnula*.

THE SMOOTH-NOSED MUNGOOSE, ALSO KNOWN AS MELLER'S MUNGOOSE

(*Rhynchogale melleri*)

This mongoose differs from the typical kinds in a few anatomical characters, such as having no

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naked line running from the nose to the upper lip, and the skull having a rounded appearance without any pronounced angles or crests, and the palate deeply concave. By reason of these differences, naturalists have placed it in a genus by itself.

The Smooth-nosed Mongoose inhabits the eastern parts of Africa, and appears to be rather rare. It has been found at Komatipoort, and can, therefore, be claimed as one of the South African animals. Its food appears to consist of wild fruits, insects, and no doubt the various small mammals, such as those eaten by other species of mongooses.

The general colour is, according to W. L. Sclater, "dark ashy, darker along the middle line of the back; woolly underfur dark slaty with pale brown tips, the longer hairs ringed brown and white; head coloured like the body; nose completely surrounded by hairs, so that there is no bare line between the nose and the upper lip. Tail with long hairs, much as in the White-tailed Mongoose, with a dark dorsal line and black tip, all the hairs being white at the base; iris dark brown with sea-green centre. Head and body twenty-two inches; tail fifteen inches."

THE BANDED MUNGOOSE

(*Glossarchus fasciatus typicus*)

The Banded Mongoose has been placed under a different genus to the preceding species owing to



The Banded Mongoose (*Crossarchus fuscatus typicus*).

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certain anatomical differences, one of which is that in this species the palate is flat, whereas in Meller's Mongoose it is concave.

It occurs from Kaffraria through Natal, Transvaal, and northwards into East Africa. In Natal it is common in the coastal districts. The Banded Mongoose lives in small communities, usually in the vicinity of rivers, in burrows, and often in the old deserted heaps of termites. Their ways and habits are very similar to those of the common meerkat of South Africa. Like the meerkat they have a habit of sitting up on their haunches and peering round in a most inquisitive manner; or standing contentedly basking in the sun with their legs apart to allow the sun's rays to strike the abdomen. Their voice, too, resembles that of the meerkat, for, when pleased or desiring to attract attention, they give vent to a plaintive twittering or trilling succession of sounds. When irritated or alarmed they bark somewhat like a small dog. Like the meerkat they diligently scratch the ground in search of insects, which they devour greedily. They also eat roots, berries, seeds, tender shoots, and sweet bark. Lizards, snails, slugs, and other small creatures also form a portion of their diet. The shells of snails and eggs they smash by taking them between the forepaws and dashing them back behind their hind feet against some hard substance such as a stone or wall.

In captivity the Banded Mongoose is as amusing,

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affectionate, and docile as the well-known Slender-tailed Meerkat (*Suricata tetradactyla*) already referred to. Like the latter it is very useful in eating up cockroaches and other troublesome insects. The Banded Mongoose does a considerable service to man in checking the too rapid increase of harmful insects. It is one of the few animals which prey largely on the insects in their larval or grub stage. Its powers of smell are so highly developed that it is able to locate the exact position of a grub underground, and, with its sharp claws, digs it up and devours it. These grubs are mostly the larvæ of vegetation-eating beetles, and during the period they remain underground they feed upon the roots of grasses, pasture plants, and agricultural produce.

It may be urged that out in the veld these insects do little harm to the farmer beyond injuring pasture plants, but it must be remembered that these larvæ or grubs emerge in due time from the ground in the form of various winged insects which invade the neighbouring cultivated fields and deposit their eggs amongst the crops, and thus infect the farms with insect pests which the farmer finds it impossible to destroy, as they work unseen underground. Many species of insects harmful to man, such as the Migratory Locust, multiply unchecked out in the wilds, and afterwards spread broadcast over the country. It would, therefore, be well for man to hesitate and ponder carefully instead of coming to hasty conclusions and rashly taking the lives of the creatures

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evolved by the Creator to fulfil important missions in the economy of Nature. As a rule, the farmer does not trouble himself to become acquainted with the animals of veld, forest, mountain, and stream, except for the purpose of knowing where to look for them in order to hunt them to death with dogs, or to amuse himself by shooting them wantonly. His children, with such an example set them, grow up regarding birds, animals, and other creatures as providing a means by which they may beguile leisure time in hunting and shooting them, and by so doing often bringing retribution upon themselves in the form of plagues of rats, mice, locusts, and other insects, as well as many stock diseases.

The Banded Mongoose is so called because of the presence of about twenty alternate black and dull white bands on the hind half of the body; each white band on its posterior part gradually shades into rufous before joining the black band. The alternate black and white bands are caused by the individual hairs, which are ringed black and dirty white, being arranged in such a way that the colours show up as bands.

The limbs are darker than the back, and nearly black towards the toes. The tarsus is bare, and there are five toes to each foot. Length of the head and body about sixteen inches; the tail is of about half this length, and black towards the tip.

There is a local race or sub-species (*Crossarchus fasciatus senescens*) in Portuguese East Africa.

THE BUSHY-TAILED OR ROOI MEERKAT

(*Cynictis penicillata typicus*)

THE Bushy-tailed Meerkat, which is also known to colonists as the Rooi or Red Meerkat, and to the Amaxosa natives as the Igala, is not the one which makes such a gentle and affectionate pet, and which is known, if not by sight, at least by reputation, to most South African colonists. The Bushy-tailed Meerkat seen in the distance is reddish-yellow in appearance, but on close inspection it proves to be a dull orange-yellow colour. It is an inhabitant of the eastern parts of the Cape Province, extending north through the Orange Free State, the high veld of the Transvaal, Bechuanaland, and the Kalahari, to Lake Ngami.

On the karoo in the western parts of the Cape Province it is replaced by the well-known Slender-tailed Meerkat, which colonists capture and tame. The latter has, however, extended into the Eastern Province of the Cape, as far south as Uitenhage and Alexandria, where its species is now abundant.

The Rooi Meerkat lives in colonies of a score and



The Bushy-tailed or Rooi Meerkat (*Cynictis penicillata typica*) which clears the South African veld of rats, mice, and noxious insects.

THE BUSHY-TAILED OR ROOI MEERKAT

more individuals on the karoo. On the site of their home the ground is often honeycombed with their burrows. When seeking food they scatter in all directions, and, when alarmed, race back and disappear with the greatest of haste down their burrows. Presently sharp noses may be observed protruding from the burrow entrances, followed by the heads, and the meerkats make a careful survey of their surroundings and listen intently for some time before again venturing forth.

The burrows are usually found in mounds of comparatively loose earth, and at other times on gentle slopes, as the meerkat is always careful to construct its burrow in such a way as to prevent flooding by rain-water.

At Addo, which is in the Uitenhage Division of the Cape Province, and about forty-five miles from Port Elizabeth, there is a large colony of these meerkats on the karoo veld, which numbers at least fifty individuals. The burrows enter the earth at an angle, and near each hole is a mound composed of the earth scraped out in excavating the hole. The number of individuals is determined by the food supply, and the degree of security or otherwise from enemies. When food is scarce they scatter and roam away in pairs until they find some locality abounding in insect and rodent life.

They have the same habit as that of the Ground Squirrel of sitting upright on their haunches and surveying their surroundings for evidences of the

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enemy. On the slightest cause for alarm they instantly disappear underground or into cover afforded by rocks or undergrowth. Out upon the karoo they cannot be distinguished from the Ground Squirrels unless approached closely. Although as large as itself, the Bushy-tailed Meerkat attacks and devours the Ground Squirrel. In the neighbourhood of man they are usually shy and secretive. They are frequently seen in the bush-veld, dense shrub, or vegetation-covered, rock-strewn localities where they have their burrows securely hidden.

They are diurnal by habit, but when living in the vicinity of man they often become night prowlers and do considerable harm to the poultry farmer. They often hunt in this way in pairs under cover of darkness.

When riding or driving across the vast stretches of the dry karoo of the Cape Province midlands, I have seen a dozen or more of those Bushy-tailed Meerkats in the course of a day's journey, but they were always either in pairs or in quite small colonies. Sitting erect for a minute or two the meerkat watches you approach, then dropping down it makes off at a fairly rapid pace with a series of leaps and bounds through and over the sparse stunted growth of the dry karoo, with its handsome tail streaming out behind it. Dogs can easily overtake this meerkat if it is not within a hundred yards or so of dense cover or its hole. When brought to bay it fights with the greatest of determination and

THE BUSHY-TAILED OR ROOI MEERKAT

courage. It is often hunted with terrier dogs, and if it should happen to take refuge in the deserted burrow of an Aard Vark or Spring Hare, a trained terrier will go in after it and frequently succeed in dragging it out, not, however, without getting several severe bites about the lips and head.

However, no dog can follow a meerkat down a burrow excavated by itself, as it is much too small. The only way to secure it in such situations is to laboriously dig it out. They can easily be captured alive by placing cage traps baited with meat near their holes. It has been stated these meerkats are never met with in the bush-veld. On the contrary, I have frequently observed them in bushy country, not in the dense native forests, but in the true bush-veld. Scores of times I have surprised them sunning themselves in the glades, and on the roadways through the bush. The instant I came into view they bounded off to cover.

Riding on the outskirts of bushy lands these meerkats may frequently be seen out a hundred yards or so upon the open veld in search of insects, reptiles, small mammals, the eggs and young of ground birds, which constitute their chief diet. On the slightest cause for alarm they make for the scrub with a series of graceful bounds.

In the neighbourhood of Port Elizabeth the Bushy-tailed Meerkat is common, even in the dense forests which have been planted by the Government Forest Department with a view of fixing the

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drifting sand which threatened to bury a portion of Port Elizabeth. At intervals through this forest broad belts or roads have been cut to act as fire breaks. On these open spaces the meerkats may be seen at any time of day lying stretched out in the sun, sporting with one another, or in the act of stalking a Bush Pheasant (*Red-necked Francolin*). They are often seen in the public roads scratching and turning over the dung in search of beetles, which they greedily devour.

Until recently, colonies of these meerkats lived on the outskirts of Port Elizabeth, but, owing to continued persecution, these colonies have vanished, and the individual meerkats composing them have scattered and now live in pairs.

Out upon the karoo, away from the habitation of man, the Bushy-tailed Meerkat exists upon Otomys, mice, the eggs and young of ground birds, lizards, small tortoises, and insects. They at times attack and devour larger prey, for if any Ground Squirrels should be in the neighbourhood they do not hesitate to follow them down their burrows and attack and kill them. Even the Springhaas or Jumping Hare falls a victim to these little carnivorous creatures. It is a common occurrence to find a pair of these meerkats in possession of a burrow of a Jumping Hare or a Ground Squirrel, the rightful occupants having either been devoured or driven out.

There are many species of land tortoises in South Africa. They all lay eggs. The parent excavates

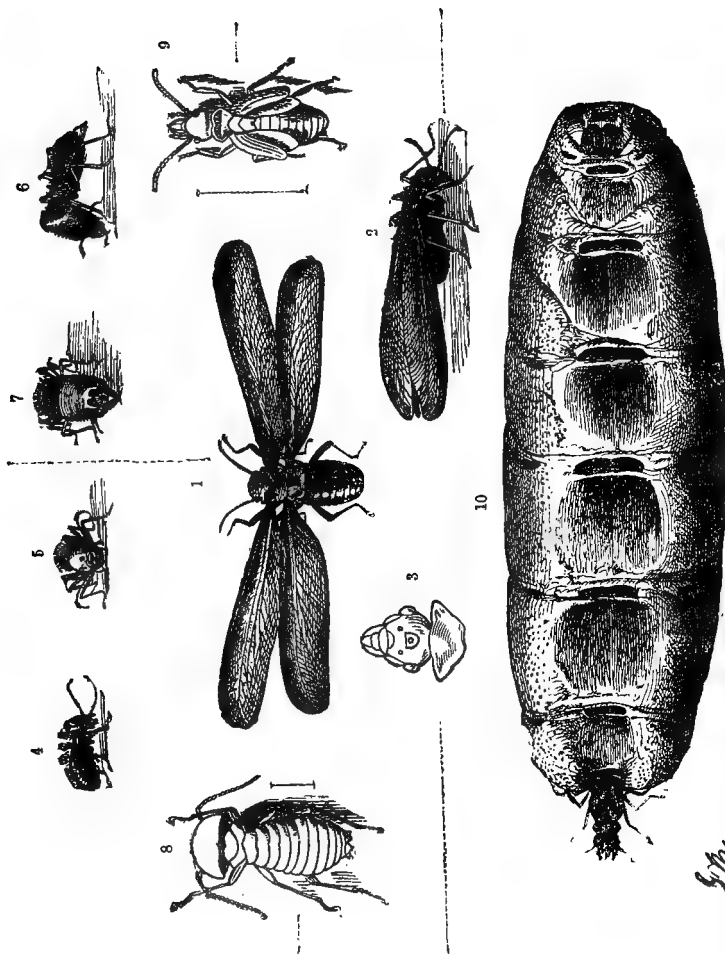
THE BUSHY-TAILED OR ROOI MEERKAT

a shallow hole in the soil and lays one or more eggs therein. The hole is then filled with the loose dirt, and after moistening it with a urinary secretion it is stamped down hard. The Bushy-tailed Meerkat, guided by the peculiar odour of this secretion, finds the spot, digs up the eggs, and makes a meal of them. The young tortoises also fall victims, for at this time their shell or carapace is not sufficiently hard and strong to withstand the teeth of the meerkat. The eggs of snakes are sought out and devoured, and this bold little animal does not hesitate to even attack venomous snakes.

Termites or "White Ants" are eagerly eaten by this meerkat. A small piece of the mound is scraped off, and when the little inhabitants swarm out, they are licked up. I came across a pair of meerkats one day busy devouring the "flying ants" as they emerged from the ground. These flying ants are fertile male and female termites which, at certain seasons, hatch out in the nest, develop wings, and fly off to establish new homes.

When these flying ants begin to take wing, the birds of the air, the animals of the plains, the reptiles, and the carnivorous species of insects issue forth and feast upon them. If this slaughter did not occur these termites would swarm over the land and render the greater part of it uninhabitable by man.

In the neighbourhood of farms the Bushy-tailed Meerkat often proves a pest owing to its fondness



Termites or "White Ants" and their development.—1 and 2. Winged Males; 3. The head, enlarged; 4. Worker; 5. Worker, front view; 6 and 7. Soldier, side and front view; 8. Worker, much enlarged; 9. Nymph; 10. Queen, life size.

From "The Royal Natural History": Warne & Co., Ltd.



A pair of Bushy-tailed or Rooi Meerkats in their native home.

THE BUSHY-TAILED OR ROOI MEERKAT

for fowls' eggs and chickens. Unlike the muishond, it rarely ventures into fowl-houses. The eggs it levies toll upon are these laid by hens out in the bushes or grass some distance from the homestead. When a hen ventures too far out on the veld with her chicks, a few are snapped up. When dogs are kept at the farm this meerkat always keeps at a considerable distance, as it has a wholesome dread of these animals.

It has, however, acquired the evil practice on some stock farms of killing small lambs. The lamb is seized by the nose by one or more meerkats, and slowly dragged to the burrow. Should it fall exhausted on the way, the flesh on its face is eaten off. Dead lambs have been found with the head and neck down the meerkats' burrows. Lambs bitten by these meerkats nearly always pine and die.

From a sportsman's point of view this meerkat does a good deal of harm in eating the eggs and young of game birds. The various species of bustard (Paauw and Korhaan) suffer to a considerable extent, for the reason that they inhabit the districts most frequented by the Bushy-tailed Meerkat. This meerkat does not make a very interesting pet in captivity. It is shy, suspicious, and cunning, and has none of the interesting and comical ways of its cousin the Slender-tailed Meerkat. If captured when already adult, it can never be satisfactorily tamed, but if caught young it soon loses its dread of man, and will allow itself to be

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handled, but it is easily alarmed, and if roughly handled it will bite viciously. At the Port Elizabeth Museum we have kept them alive from time to time. They are showy little animals—sharp, alert, and full of energy. They thrive on a diet of meat and eggs.

The general colour of the Bushy-tailed Meerkat is reddish-yellow. The fur is slaty at the base, then yellow, the tips of the longer hairs being ringed brown and white. The under parts are whitish; chin and throat white; ears brown margined with white hairs; limbs paler than the back; five dark claws on each of the fore limbs, and four to the hind limbs. Tail long and covered with rather lengthy hairs, which are yellow at the base and tip, with a black broad band between. The tip of the tail is white, but not invariably so.

Length from tip of nose to root of tail about sixteen inches.

The Bushy-tailed Meerkat has been divided into several local races owing to slight variations in the colour and size. They are as follows :

<i>Cynictis penicillata intensa.</i> •		
„	„	<i>steedmanni.</i>
„	„	<i>ogilbyi.</i>
„	„	<i>pallidior.</i>
„	„	<i>leptura.</i>

Another species of Bushy-tailed Meerkat, known as Selous' Meerkat (*Cynictis selousi*), occurs in Rhodesia, and up the East Coast.

THE SLENDER-TAILED MEERKAT

Yet another Bushy-tailed Meerkat, but of a different genus (*Bdeogale crassicauda*) is now registered as one of the South African fauna, it having been procured south of the Zambesi, in Mossambique. It occurs chiefly in East Africa, north of the Zambesi. This species is distinguished by having four toes to both fore and hind feet.

THE SLENDER-TAILED MEERKAT

(*Suricata suricatta*)

Syn. : *S. tetradactyla*

THIS little animal is the typical meerkat of South Africa, and is known by all colonists as such. It inhabits the karoo portions of the uplands of the Cape Province right across from Namaqualand on the west to Griqualand East, and northwards through the Orange Free State and Great Namaqualand. In the Uitenhage and Alexandria Divisions of the Cape Province it is quite common ; so much so that it has become a pest on many stock farms.

This meerkat digs burrows out on the exposed karoo, and lives in small colonies. When persecuted by man they frequently wander off and live in pairs, seeking less exposed situations for their burrows. Like the Ground Squirrel and the Bushy-tailed Meerkat, they have the habit of sitting erect on their haunches and gazing curiously around. This habit of sitting erect is very pronounced,

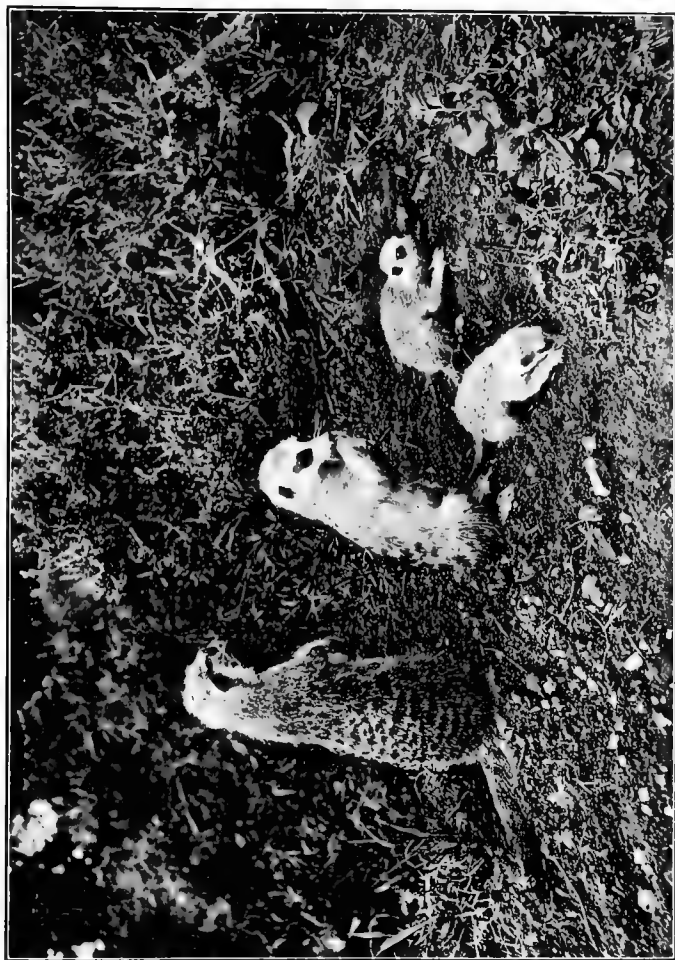
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for this little fellow is constantly popping up to glance around.

In the wild state it may be seen at almost any time of day diligently scratching the soil in search of tubers and bulbs, which are so abundant on the karoo veld.

These it devours, as well as any beetles, worms, or larvæ it may succeed in unearthing. Any small creature which the meerkat is able to capture and overcome is greedily eaten. The young and eggs of snakes are sought out and furnish a meal for this energetic little hunter. He is a source of terror to rats and mice, for he pursues them to their retreats ; and should they be of the species which take refuge in holes, he thinks nothing of spending half a day in digging one out. The Striped Field Mouse, which is common all over South Africa, as well as some other species of rats and mice, build nests in tufts of grass and low shrubs, and in these half a dozen or more young are born at a time and reared. The meerkat, whose sense of smell is exceedingly acute, smells out these nests and devours the young, thus helping to maintain the balance of Nature. Rats, mice, and venomous snakes are very quick-breeding creatures, and if not preyed upon by many enemies would soon become a scourge to man.

Should any bird be foolish enough to build its nest upon the ground in the haunts of the meerkat, it will not hesitate to devour the eggs or young.



A pair of Slender-tailed Meerkats and their young ones upon the Karoo veld. Of all the South African animals, the meerkat is the easiest to tame.



THE SLENDER-TAILED MEERKAT

Very few birds, however, build their nests in the localities frequented by these meerkats. The Slender-tailed Meerkat is the most easily tamed species of animal in South Africa. It is singularly unsuspicious of man, and grows so affectionate that at times it becomes a positive nuisance. Tame meerkats seem to be obsessed by two dominant ideas, viz. to ferret around for food, and to seek warmth. Placed in a garden it pokes and scratches about everywhere in a restless, nervous sort of way, emitting a low, chattering, whining noise almost incessantly. There is nothing it loves better than being allowed to conceal itself upon one's person, underneath the clothing. It will crawl up a trouser leg, sleeve, or beneath a waistcoat until it finds a warm and restful spot, whereupon the fretful chattering ceases.

This meerkat is a true Sun Worshipper. Before sunrise they are out of their burrows, patiently waiting for the rising of the sun. Then, sitting on their haunches, with legs apart, the abdomen is exposed to the sun's warm rays.

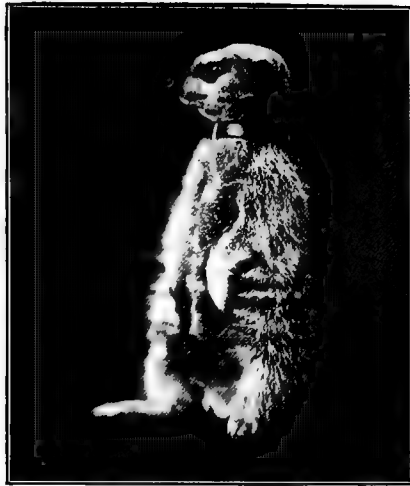
It is most amusing to watch captive meerkats when the weather is at all chilly. The instant one is released from its cage or chain, it runs out into the sunlight, and, lying upon its back, it spreads out its legs and flattens its body in order to absorb the maximum amount of heat. There it lies in an utter abandonment of delight, crooning and muttering to itself. If the garden is large and the meerkat

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has strayed, all that is needed is to seek out the exposed places where the sun is beaming down upon the ground, and on one or other of them you will find the little fellow basking as usual. When the sun sets it races off, seeks out the kitchen stove, sits up before it, and, spreading out its limbs, toasts itself.

The antics and comical ways of captive meerkats provide an everlasting source of amusement and conversation for the members of the household. The little fellow is always cheerful, brisk, affectionate, and good-tempered. It is never advisable, however, to give tame meerkats their liberty, unless they are kept under supervision or in a closed yard, for they are apt to stray away and get lost. In captivity the meerkat will eat anything of an edible nature. Any of the kinds of food partaken of by its owners it will eat. It loves to dig out worms and the larvæ of beetles, moths, &c., for itself. Its sense of smell is so acute that it can instantly detect the presence of any living creature, or a bulb underground.

When annoyed the meerkat barks sharply and shrilly, very much like a young terrier dog. In the wild state the alarm is given by a series of sharp barks, whereupon all within hearing scuttle off to their burrows and take refuge therein. Presently little noses may be seen popping up, then a head, and the meerkat looks rapidly around. If the cause for alarm has vanished, they are out



Billy the Meerkat who lived "not wisely but too well." He is a household pet in a fashionable home, and has in consequence grown somewhat corpulent, for "he neither toils nor does he spin." All his wants are provided for him.



The skull and teeth of a Slender-tailed Meerkat. (Natural size.) The canine or fighting teeth are large and sharp, and the molar or back teeth are specially adapted for crushing the hard shells of beetles and chewing them up.

THE SLENDER-TAILED MEERKAT

and on the move, or lying basking on their backs in the sun once again.

A meerkat which I kept for a considerable time in captivity successfully attacked and killed several venomous snakes which I threw in front of it. Watching its opportunity it made a rapid rush, seized the reptile by the head, and held grimly on until it had succeeded in crushing the skull. It then chewed up the head and swallowed it before satisfying its hunger from the body part. I could never induce it to attack large venomous snakes. It was evidently aware of the danger involved in so doing.

As a pet the Slender-tailed Meerkat is in great demand. There is a considerable mortality amongst meerkats kept in captivity, for the reason that they are overfed, and in consequence their digestive organs become seriously deranged. They grow emaciated, and the stomach and bowels become greatly dilated. This habit of feeding household pets at any odd time always brings about disease in some form in the animals. Unfortunately the unscientific custom is well-nigh universal of feeding children in the same haphazard way, allowing them to eat sweets, cakes, and other foodstuffs between meals, thus laying a sure foundation for future ill-health ; or bringing about the death of the child from some disease which its weakened body and impure blood could not overcome.

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The natural enemies of the meerkat are few. The eagles are those they are in ever-present dread of, for, without an instant's warning, an eagle will drop like a stone from the sky, and the first intimation of its presence is its outspread wings when breaking its fall preparatory to seizing its prey. The Honey Ratel is another enemy which perseveringly digs the meerkat from its burrow and devours it. These ratels are relentless in their pursuit of prey. Should one happen on a little colony of meerkats, it patiently digs them out one after another, and satisfying its hunger off the body of one, it carries the others, one at a time, away to its lair.

When meerkats increase unduly in numbers, food becomes scarce and the balance of Nature is restored by the adults devouring the young of each other. Should famine threaten, the weaker ones are attacked, slain, and eaten in obedience of the law that the fittest shall survive to perpetuate their kind for the ultimate good of the race.

The meerkat is not a very quick-breeding animal. Two are the usual number produced at a birth. The young are reared in a nest at the end of the burrow. A Slender-tailed Meerkat is about fourteen inches in length from the nose to the root of the tail. The tail tapers to a point, and is six to seven inches long, reddish-yellow in colour, and tipped with black. The eyes are dark brown, and the surrounding skin is black. Ears small, dark,

THE SLENDER-TAILED MEERKAT

and rounded. Front claws large and curved. The snout projects a good deal beyond the lips.

The animal is grizzled grey with a reddish-yellow hue. The back is banded with irregular black and whitish bands which are caused by the regularity of the black and white rings on the longer hairs. The under parts are pale yellow or whitish.

The Slender-tailed Meerkat is divided into three local races owing to slight variations in colour and size. These are as follows :

Suricata suricatta namaquensis.

„ „ *hamiltoni.*

„ „ *lophurus.*

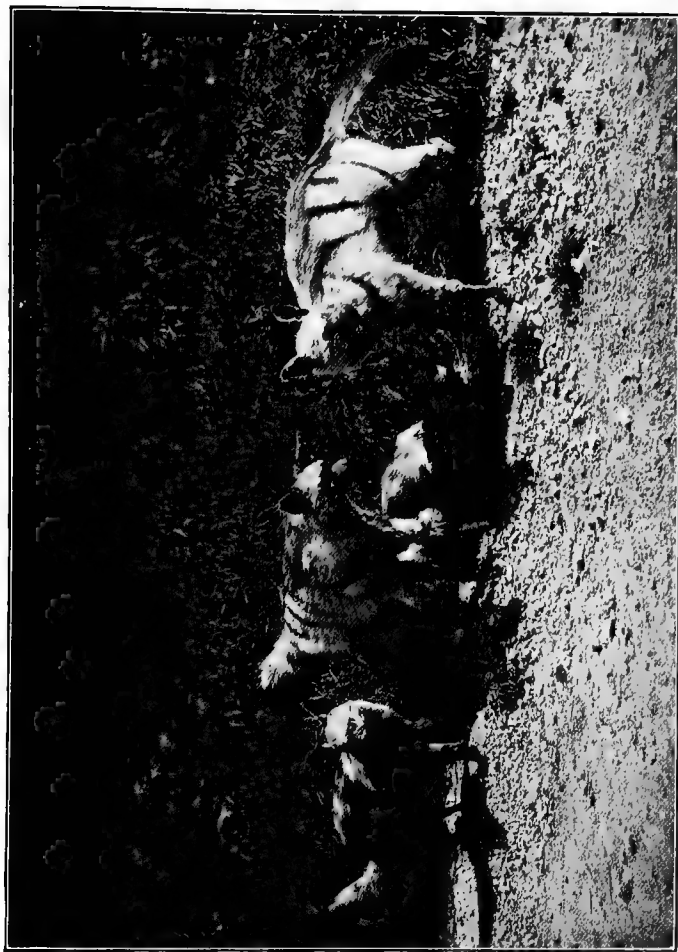
THE AARD OR EARTH WOLF

(*Proteles cristatus*)

Also known as the Manhaar Jakhals ; Grey Jackal ; Nadrou Jackal ; Wehr Wolf ; Inci of the Amaxosa natives ; Isingci of the Swazis ; Tuku of the Basutos (Kirby)

LIKE the Secretary Bird in the feathered kingdom, the Manhaar Jakhals or Aard Wolf has no relatives sufficiently allied to it in an anatomical sense to permit of it being classified in the same family. So naturalists have been forced to give it a family name all to itself. On reference to books on natural history it will, therefore, be found that the Aard Wolf is the only representative of the family termed *Protelidæ* and the genus *Proteles*.

The Aard Wolf is common throughout South Africa, and in most other parts of the continent north of the Zambesi. It is an inhabitant of the bush-veld, and the open treeless country. Sometimes it makes a lair in the dense matted undergrowth, but as a general rule it lives in burrows dug out by itself, or holes of smaller animals which it enlarges ; but more usually the holes abandoned



A family of Aard Wolves, which are also called Manhaar Jakhals, which means "Maned Jackal." They hide in burrows by day and sally forth by night in search of Termites or "White Ants," locusts, and other noxious insects. The Aard Wolf is as large as a Setter Dog.

THE AARD OR EARTH WOLF

by ant-eaters are taken possession of. The end of the hole is enlarged and forms a roomy chamber. The entrance to this is just sufficiently large for the manhaar to squeeze through. When attacked by dogs, he defends the entrance to this chamber with great vigour. In Natal I found the Aard Wolves usually preferred the deserted holes of these Aard Varks or ant-eaters. It seemed apparent that when such holes were available the Aard Wolves always would take possession of them in preference to excavating burrows for themselves. A burrow is inhabited by a pair of these animals. The puppies, which are usually from two to four in number at a birth, are born and reared at the bottom of the burrow. As many as six in a litter have been recorded. The young animals remain with their parents until they are well grown and capable of taking care of themselves. Once in Natal we gave chase to a pair of adults and half-grown young ones which raced off and scrambled all of a heap into their burrow, which was of ample dimensions, being that of an ant-eater. It is quite an easy task to dig them out, for they lie cowering in abject fear at the bottom of the burrow instead of energetically tunnelling the soil to place a greater distance between themselves and their pursuers, as does the ant-eater. Aard Wolves are strictly nocturnal, issuing from their lairs at dusk and returning at dawn. They can easily be run down by dogs. In fact an active man could in many instances overtake them if they

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are out upon the open veld, and not too near their burrows. When overtaken, they discharge the contents of two anal glands, which is a yellow viscous fluid and has a disagreeable musky odour. This is done as a protection, for it is particularly unpleasant and nauseating to carnivorous animals. Aard Wolves are exceedingly timid creatures, and on the slightest cause for alarm will rush off and take sanctuary in their burrows, or in the dense matted shrub. When brought to bay by dogs the Aard Wolf emits a roaring kind of noise, ending in a sharp yell, and makes short dashes at the dogs in the vain hope of intimidating them. When surrounded or cornered by dogs it seems bold enough, but beyond snapping at random it does not offer any very serious resistance. On being seized by a man it frequently prostrates itself upon the ground and lies still. A pair with two almost half-grown young ones were dug out of a burrow by a Dutch friend of mine in Natal. When he came upon them at the end of the hole, they were huddled up in a heap; seizing them one at a time, he dropped them into a mealie sack held open by a Kafir. They did not resist in the slightest. In captivity the Aard Wolf is exceedingly timid, and, retreating to the darkest corner of its cage, coils up and lies still until dark. It then becomes very restless. If taken when in the puppy stage it is possible to make these Aard Wolves as tame as any domestic dog. Moreover, they soon lose their instinct to



An Aard Wolf about half grown. When captured they are as timid as rabbits, but when treated kindly, become very affectionate. In captivity they show no desire to attack poultry or any living thing, except insects and other very small creatures. The colour of this animal blends perfectly with the ground and parched vegetation of the localities which are its favourite haunts.

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sleep by day and roam by night, and will romp and play and seek food at any time of day. Many other animals, which in their wild condition are nocturnal, change this habit when captured young, and become alert and active during the daytime. The Honey Ratel is an example. So timid are these Aard Wolves that when adults are captured it is very difficult to induce them to eat. An animal dealer of my acquaintance at various times purchased adult Aard Wolves from Hottentots who dug them out of burrows. In most instances they refused all food and died in a week or two. The young ones, however, quickly become reconciled to captivity, and after a day's fast will eat freely of mince-meat, boiled eggs, or eggs and milk. I have from long experience found it inadvisable to give starchy foods such as bread or porridge to animals whose diet in the wild condition consisted entirely of flesh, which includes all forms of life other than vegetable. Starchy food causes indigestion, with subsequent bowel troubles, for the reason that the digestive juices of strictly carnivorous animals are not adapted for the digestion of starch in any form. However, with care it is quite possible to accustom carnivorous animals to a starchy diet, but the work must be begun when they are young—the younger the better.

The domestic dog and cat are instances of flesh-eating animals whose digestive juices have been modified to digest starch. In its native condition

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out upon the veld, the diet of the Aard Wolf consists of locusts, and termites which are generally known as "White Ants." When these are scarce or unprocurable, all edible forms of insect life are eaten, supplemented by the eggs and tender young of ground birds, the eggs of snakes, young rats, mice, lizards, and carrion. However, there can be no doubt that the main diet of this animal consists of those often highly destructive creatures called termites or "White Ants."

Like the ant-eater or Aard Vark, the Aard Wolf in this respect renders man exceedingly valuable service. The damage wrought by many of the species of termites is immense, as those who have resided in the parts of the country infested with these pests have reason to know. The Aard Wolf does not possess a special insect-collecting apparatus like the long sticky tongue of an ant-eater, but it can nevertheless dispose of a considerable number of termites in a very short space of time. Digging down right into the nest it searches until the queen termite is found enclosed in her royal cell of clay. This is broken by the animal's teeth, and the fat queen, which is a dainty morsel the size of a man's thumb, is devoured. Then the whole of the breeding part of the nest is scattered, and the supplementary or reserve queens are eaten, or left exposed upon the surface of the ground to fall a prey to birds, small mammals, or carnivorous beetles. For many years past, whenever a specimen of an Aard

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Wolf was sent to the museum, or if the body otherwise came into my possession, I always made a point of examining the contents of their stomachs. Although a considerable number were examined, I never in a single instance found anything but the remains of insects of various sorts, a few small lizards, young mice, and rats, and, in others, some traces of what seemed to be carrion. In the stomachs of many of them there was no trace of anything but termites.

Mr. Cloete, who has done such good service in the cause of Natural History in the past, writes that he examined the stomachs of over fifty Aard Wolves and never found a trace of anything in the way of food, other than that which indicated a purely insectivorous diet. He went further and carefully examined the excrement, but such examination only served to confirm his other observations. Sparrman and other authors declare that the contents of the stomachs of all the Earth Wolves examined by them contained termites only. These observations made it clear that in those districts which are infested with "White Ants," the Aard Wolf, like the Ant Bear, subsists almost, if not entirely, on them. In the parts where termites are scarce or non-existent, a miscellaneous assortment of insects and small soft-bodied creatures constitutes the diet of the animal. Apart from the actual examination of the contents of the Manhaar Jakhal's stomach, a glance at the teeth of the animal would

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convince anyone that it could not deal with any bony matter or lumps of flesh, for its molar or grinding teeth are quite rudimentary, and its front or incisor teeth are small and blunt. This alone is sufficient evidence to make it clear to us that like the Aard Vark, the Manhaar Jakhal's normal diet consists of soft food, or food which does not require to be torn or chewed before being swallowed. In fact, whatever the animal takes into its mouth is either swallowed entire or merely crushed to a slight extent. It is claimed by some farmers that Manhaar Jakhals kill and devour kids and lambs. It is quite true that they do resort to this practice, for hunger drives an animal to desperation, and will cause it to alter its ways considerably.

On a farm in the Humansdorp district of the Cape Province, there are at least fifty Aard Wolves which live in the deserted burrows of Aard Varks. The owner of the farm keeps large numbers of different kinds of stock, including sheep and goats. He informs me that, although he has resided on the farm for a number of years, he has never sustained any loss through Aard Wolves. Knowing they are perfectly harmless, he never shoots or hunts them, consequently they are not so timid and secretive as they are in most parts of the country. In consequence he frequently sees them about before dark, and on many occasions has actually observed them among the sheep and goats shortly after the birth of the lambs and kids. He is posi-

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tive in his assertions that they never molest the young stock, or interfere with ostrich eggs or chicks.

On two or three occasions, to test whether they ate flesh food, he placed lumps of meat in front of their burrows, but they did not touch them.

It is asserted by many farmers that some of these animals have acquired the habit of killing lambs and kids for the sake of the curdled milk in their stomachs. This is a habit which baboons in some districts have acquired.

It is also accused of eating ostrich eggs. The Cape Jackal is known to have acquired this habit. The eggs are broken by knocking them against each other, or on stones. If Aard Wolves are occasionally guilty of these practices, it does not follow that it is a habit of all their tribe. Because a hawk takes to chicken-stealing, it by no means follows that all the hawk tribe should be condemned and shot at sight because of the guilt of one of their kind.

Aard Wolves are shy and timid animals, and go in mortal fear of dogs. They are poor runners, and, therefore, do not venture far from their lairs, except in the parts of the country remote from the habitations of man. Most farmers secure their sheep and goats at night in pens or kraals, and in these situations they are invariably safe from any over-venturesome Aard Wolf, which would belie its nature if it ventured within the sphere of the farmer's dogs. The animal being nocturnal, it would, therefore, not interfere with any kids or

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lambs out upon the hillside or veld during the day-time. If kids or lambs are killed during the day, and afterwards found with their stomachs torn out, then in all probability baboons are the offenders.

Even if the assertion were true that the Manhaar Jakhals occasionally eat the eggs of ostriches, the number so devoured must be insignificant. The reasons are several. Many farmers artificially incubate their ostrich eggs. The majority of those who allow them to hatch normally take care that the nest is in a camp near to the farmhouse, especially in the parts of the country which are infested with Kafir dogs, and the larger carnivorous animals such as the leopard, lynx, wild dog, and Cape Jackal. Even supposing a nest was remote from the homestead, it is even then highly improbable that such a timid nervous creature as the Aard Wolf would be so bold as to actually drag the eggs from under the cock ostrich, for it must be borne in mind that the male bird sits upon the eggs during the hours of darkness when the Aard Wolf is on the prowl, and that at the breeding season he is fierce and aggressive. A Cape Jackal is capable of stealing an egg or two from under a sitting bird if the night be dark, but, judging from the disposition of the Aard Wolf, such a proceeding is extremely unlikely.

Again, these animals being nocturnal, is it likely that a farmer will sit up throughout the night on the off-chance of seeing a Manhaar Jakhal kill or



The jaws of an Aard Wolf, showing the rudimentary condition of the back or molar teeth. There are four in the upper jaw and two in the lower jaw. They are quite useless for mastication.



The jaws of a Cape Jackal, showing the powerful back teeth which are used for rending and tearing fleshy substances. Compare this mouthful of strong teeth with the feeble ones in the jaws of the Aard Wolf.

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carry off lambs and kids or break ostrich eggs? Is it not likely that the statements of the Hottentot and other employees whose powers of imagination are wonderfully developed are accepted as facts without investigation? After twenty-five years' experience I have come to the conclusion that, while in some of the yarns these natives tell as fact there is just an element of truth, yet in the majority there is no element of truth at all.

However, I have made extensive inquiries of farmers in different parts of the country on the subject. Some of them declare that the manhaar does no harm at all; while others are equally positive that it kills lambs and even full-grown sheep and goats. I have statements before me from several well-known farmers who declare they have seen this jackal attack lambs and sheep, and even killed them in the act. Mr. H. R. Wilmot of Alicedale, for instance, writes in the *Farmer's Weekly*, 11th October 1916: "I myself have seen a manhaar rush into a flock of sheep and catch one, and that in broad daylight too, in sight of the house."

On the contrary, Mr. John Langdon writes to the *Northern News*, 27th November 1918: "The canine teeth of the Manhaar Jackal are not adapted for killing stock or any animal whatever. I have conferred with sundry bastards, Bushmen, and Kafirs, and all bear out that the Manhaar Jackal lives on insects, tock-tockies, ants, and suchlike; and they are never trapped by a carcass unless they come to

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it when decayed, and then it is only to get the insects, etc., in and under the body.

“I have seen Manhaar Jackals in the Kalahari often; they are in droves sometimes. I have seen as many as fourteen, but generally they are in fives and sixes—that is, in the Kalahari.

“They get from four to six cubs, and breed in holes. I have taken five young ones from a hole in the ground previously made by an ant-bear. The jackal which kills stock is the red jackal with the grey back, and perhaps the all-red jackal, which I have caught by tying a kid at night and setting a trap or traps, in the same way as the greyback jackal is caught.”

Mr. Thomas Lanham also writes on the subject :—

“Mr. Langdon has sent me the above letter. I can heartily bear out all he says about the Manhaar Jackal. This animal is quite harmless to stock; any observant farmer will tell you this. A short time ago I had a flock of sheep at an out-station, sleeping out in the open (not in a kraal). At night there were a lot of these Manhaar Jackals staying close about the spot, and although there were small lambs in the flock I did not lose one of them.”

From another letter on the same subject, the *News* extracts the following :—

“I am positively certain they do not eat flesh. One sees them ferreting about the ground, looking for beetles, etc., and they do not clear far, and one hears them whistle for their mates. This they

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would not do if the Almighty had made them the killers of sheep ; and, again, natural history would tell us better. The 'Wehr Wolf,' as it is called, is no carnivorous animal ; it does as much good as the Korhaan in killing ants, tock-tockies, etc. I doubt if a Manhaar Jackal kills mice, or any animal—only insects, not even birds which lay on the ground ; they may eat the eggs, but that is doubtful.

“ I have lived on the borders of the Kalahari for the past thirty years. We have shot everything, and seen every animal, from the so-called tiger (leopard) to the meerkat, and seen Manhaar Jackals in droves of seven to ten or more, but have not seen them at a carcass, even when the flesh is fresh.”

It seems apparent that this jackal, notwithstanding its defective teeth, does attack and kill small stock. Finding sheep and lambs easy prey, the manhaar would naturally become confirmed in this habit, which would spread by imitation.

An animal driven by hunger readily changes its natural habits, as we all know. By nature the manhaar is nocturnal, but numbers of instances have come under my observation of these animals dashing out of cover in the daytime and attacking lambs, sheep, and poultry. If the manhaar has not already resorted to killing stock on any individual farm—and I know of numbers of farms where it does no harm at all—it is not wise to allow it to freely breed, for, when its species multiply,

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a sufficiency of its natural food will not be available, and it will certainly become a stock thief.

In the wide trackless stretches of dry country where vegetation is sparse and termites numerous, it is unwise to destroy the manhaar, for in such environment it is performing a work of great economic value. The termite is an enemy to vegetation, and in these dry districts the flora is, even at the best of seasons, none too abundant. When a stock farmer in any of these sparsely populated areas finds the manhaars do not interfere with stock animals, then he is a foolish man if he deliberately destroys them.

An award of ten shillings per tail is paid by the Provincial Government for manhaars killed within the boundaries of the Cape Province.

Aard Wolf is a South African Dutch name, which means Earth Wolf, because it lives in burrows like the Aard Vark, which means Earth Pig. Manhaar Jakhal is another name for this wolf. It means Maned Jackal, so called because of the long mane, which the creature erects at will, when endeavouring to intimidate an enemy.

One of these animals which I had in captivity produced two pups at a birth during the month of December.

In shape this wolf is very hyæna-like, sloping down from the shoulders. The general colour is a dirty yellow with a grey tinge. Along the back for its entire length the hair is long, forming a

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black crest which the animal can erect or depress at will. The shoulders and body are striped with black ; feet black ; tail about half the length of the body, bushy and black in colour, each hair being yellowish at the base, then ringed dark, followed by a white ring, and the tip black. The under fur is thick, woolly, and dark slate at the base. Length of body from nose to root of tail about three feet.

This wolf can be distinguished from all others by its rudimentary molar teeth, and feeble incisors.

THE BROWN HYÆNA OR STRAND WOLF

(*Hyæna brunnea*)

Incuka of the Amaxosa (*Stanford*)

THE Brown Hyæna in the past was common to South Africa, particularly so in the coastal districts on the western side of the country.

When the European settler established himself in South Africa, this wolf proved a great pest, for it preyed on his flocks and herds, and in consequence a war of extermination was waged with gun, trap, poison, and dogs against it, with the result that in those districts where it was once abundant, it is either extinct or rare. It is probably extinct by now in the Cape Province, but is still met with in the Kalahari, South-west Africa, and Western Rhodesia. A specimen of this hyæna was obtained in the Fish River Bush, near Grahamstown, some years ago, and this seems to be the only record of it having occurred in the eastern part of the Cape Province. It is unknown in Natal. Beyond the Zambesi these hyænas inhabit the western side of the continent as far as Angola, and on the east as far as British East Africa.



Photo: W. S. Berridge.

The Brown Hyæna.

THE BROWN HYÆNA OR STRAND WOLF

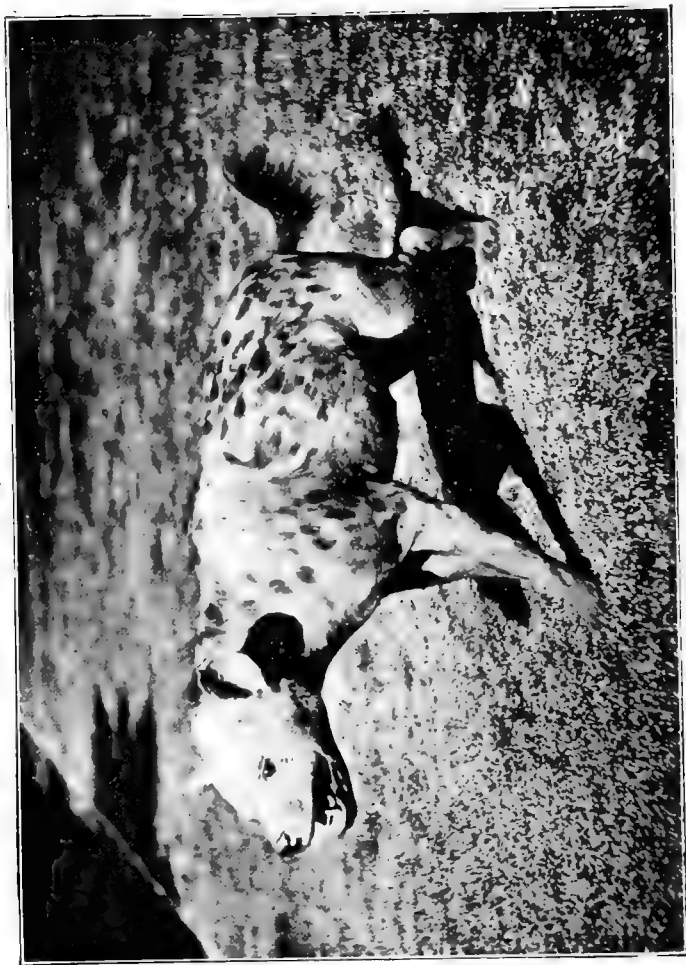
Brown Hyænas, like others of the same tribe, are Nature's scavengers, eating up the leavings of the lion, leopard, and cheetah, as well as sick, old, or maimed antelopes and other wild animals. In fact practically everything of a living nature from an insect to any warm-blooded animal in a weak or otherwise defenceless condition, as well as carrion, forms the diet of this animal. In this way the Brown Hyæna performed a very necessary part in the evolution of animal life in eating up matter which would otherwise decay and poison the air and the surrounding vegetation, for the bodies of animals which had died of disease would be one seething mass of virulent disease microbes, which, let loose, would infect other animals, and perchance be the cause of their extermination. Now, this is by no means the design of Nature, therefore the hyæna comes along and gorges itself upon the diseased flesh, and its powerful gastric juices soon kill off the microbes and digest them, thus preventing the spread of disease amongst perhaps an entire herd of animals. Then, again, it is essential that old, decrepit, or malformed animals should not be allowed to live and breed, otherwise the great plan of the Creator in perfecting the various forms of life would be marred.

Brown Hyænas often frequent the sea beaches, hence the name of Strand Wolf, which means Beach Wolf. These animals devour anything of

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an eatable nature cast up by the tide, such as crabs, dead fish, stranded penguins, seals, whales, &c., the bodies of which would otherwise putrefy and taint both water and air, and thus be prejudicial to other forms of life. If carrion is abundant the hyæna will not trouble trying to obtain other food, but this class of food cannot be depended on, so the Strand Wolf supplements his natural diet with small mammals, reptiles, the young and eggs of ground-frequenting birds, and insects.

However, like others of its tribe, including the wolves and jackals, it does not recognise the right of the humanfolk to keep flocks and herds of animals to themselves, so, when chance offers it levies heavy toll upon them, therefore the hyæna and man cannot live in proximity. When civilised man makes his advent, the scavenging services of the hyæna are no longer needed. Like others of its kind the Brown Hyæna is a cunning, secretive, and cowardly animal, hiding away in some secure retreat during the daytime, and venturing forth at night, except in remote districts far from the haunts of man, where it roams about in quest of food both day and night, with intervals of rest. The two main factors in determining the habits of animals are the presence of enemies, and a food supply. Should enemies be most numerous during the daylight hours, the tendency is to develop nocturnal habits : and again, apart from the dread of enemies, an animal, finding that other creatures



The Spotted Hyæna (*Hyaena crocuta*). It is one of Nature's best scavengers.

THE BROWN HYÆNA OR STRAND WOLF

which are good to eat are themselves nocturnal, it slowly becomes a night prowler also.

Nocturnal animals, in addition to possessing eyes which enable them to see during the hours of darkness, have their sense of smell acutely developed.

In appearance the Brown Hyæna somewhat resembles a Collie dog, but its legs are much shorter. It is covered with long hair, brown in colour, with whitish patches on the legs; the head is greyish brown, and the forehead blackish, flecked with light brown. A special feature is a long mantle of coarse hair hanging down from the neck and back and reaching below the abdomen. The tail is bushy and about a foot in length; and the ears are long and pointed. From the nose to the root of the tail the average length is three and a half feet.

THE SPOTTED HYÆNA

(*Hyæna crocuta*)

Also known as the Tijger Wolf and Laughing Hyæna; Isadawane of Amaxosa (*Stanford*); Impisi of Zulul, Swazis, and Matabele; Kwiri of Basutos (*Kirby*)

THIS large and powerful hyæna was formerly common in all parts of South Africa. When the European settlers first established themselves at the Cape of Good Hope, the Spotted Hyæna was quite common there, and haunted the neighbour-

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hood of the slaughterhouses. So destructive did it prove to the settlers' flocks and herds, that every possible effort was made to destroy it ; and in those early days when poisons of a suitable nature were so scarce, and the firearms so crude, it was no easy matter.

With the exception of a few specimens in the wild bushy localities in the northern districts of the Cape Province, this hyæna is extinct south of the Orange River. In the unfrequented bush-covered parts of upper Natal a few of these animals are stated to still survive ; and in the dense tree-covered districts of Zululand it still exists, becoming more plentiful in the eastern part of the Transvaal, Portuguese Territory, and on upwards as far as the Sahara.

When primitive ape-like man ceased to lead an arboreal life, and arming himself with clubs and roughly-chipped stone axes, he ventured forth to secure a more abundant food supply, which the ground afforded in the shape of roots, bulbs, seeds, and small living creatures, he found himself beset by many enemies. He sought out caves in which to take shelter, and finding them already inhabited by Spotted Hyænas, otherwise known as Cave Hyænas, he gave them battle, and slaying or driving them forth, he established himself in their lairs.

It was formerly considered that the Cave Hyæna was a different species to the Spotted Hyæna of to-day, but naturalists are now agreed that the two

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are identical, except that those of prehistoric times were larger and more powerful. Great quantities of the bones of the Cave Hyæna have been found in caverns in various parts of Europe and England, indicating that in ancient times the distribution of this large hyæna was far greater than at the present day. In a cave at Madras in India the tooth of a Cave Hyæna has been found, and the inference is that the southern parts of Asia were also inhabited by this species of animal.

The Spotted Hyæna is nocturnal, lying concealed by day in caverns, recesses under boulders, in the midst of thorny scrub and matted undergrowth, and down the holes of Aard Varks or ant-eaters, the rightful owners having been driven off or devoured. From these lairs beaten paths run in all directions, made by the nightly excursions of the animal. These hyænas may be met with in small troops consisting probably of parents and their grown-up puppies. At other times they hunt for food in pairs or singly.

The traveller is soon made aware of the presence of Spotted Hyænas, for the stillness of the night is rudely disturbed by the deep and powerful cry of these animals, which starts with a prolonged mournful note, beginning low and gradually rising to a high pitch. This is the cry of the animals when they desire to make their whereabouts known to each other.

The second cry is altogether different, and is

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usually compared to the wild laugh of a maniac, which has given rise to the name often applied to this creature, viz. the Laughing Hyæna. This maniacal cry is invariably heard during the mating season, or when these hyænas are unduly excited from some other cause. Nothing in the way of flesh comes amiss to this large hulking beast. It is a true scavenger, for it will devour flesh in even a liquid state of putrefaction. Failing a supply of carrion to satisfy its prodigious appetite, it resorts to killing and devouring any living thing it is able to surprise and overpower. It is a poor runner, and therefore antelopes rarely fall a prey to it. It steals upon game birds in the night, and should flocks of migratory locusts, which are such a terrible pest to man, be in the neighbourhood, they are devoured by this animal in vast numbers. When the sun sets these locusts are obliged to roost, for the cool air partly paralyses them. When trees are available they swarm upon them, but it is seldom, except in forest regions, that they find sufficient of this form of foliage, and consequently they alight in millions upon the ground and low bushes, and are thus within reach of prowling hyænas, jackals, and scores of other carnivorous night prowlers. Of course, when in the wingless stage of development, locusts are at the mercy of animals day and night, and whole swarms are swept out of existence by animals such as the Spotted Hyæna.



The skull of the Spotted Hyæna or Tiger Wolf, showing the terrible teeth with which it tears masses of flesh out of its victims. (Skull one-half natural size.)

THE SPOTTED HYÆNA

When carrion is insufficient for its needs, and flocks and herds are in its neighbourhood, it at once turns its attention to them, and the stock farmer has a bad time until he succeeds in killing it.

The Spotted Hyæna has large massive teeth and powerful jaws, enabling it to crush the hardest bones to fine splinters with ease. In fact, it possesses stronger jaws and teeth than any other living animal.

This hyæna invariably attacks stock by first tearing out the bowels with its terrible teeth, which at once cripples the animal, allowing it to fall an easy prey. If a bull or stallion is bold enough to show fight, the Spotted Hyæna at once beats a retreat. Hunters, knowing its sneaking, timid nature, usually hobble their horses, for, if attacked by a hyæna and finding it impossible to gallop off, the animals, in desperation, usually brace themselves to do battle with their foe, and a spirited horse is no mean antagonist, for he can use his heels and teeth at times with great effect.

A friend relates an instance of an attack on the horses of himself and friends when hunting in the Kalahari. The animals were hobbled, and were quietly nibbling the sparse vegetation when a pair of Spotted Hyænas made a sudden rush from behind a sandhill. The horses neighed shrilly in the extremity of their terror, and two fell headlong in their attempts to gallop away, but one wiry little Basuto pony, quick as thought, wheeled and made

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a desperate drive with both heels at the nearest hyæna, which was about to make a grab at him. One hoof struck the creature a severe blow on the chest, so severely crippling it that it was subsequently captured alive. Its mate instantly fled when it saw its companion injured.

The Spotted Hyæna is a useful scavenger to the natives of Africa who live in villages, for, during the night, they clear up every particle of filth deposited on the outskirts of the village. Pressed by hunger, they sometimes steal amongst the huts under cover of darkness, if there be no stockade surrounding them; and should a child be unwary enough to be outside a hut, it is instantly seized and carried off into the neighbouring bush, where pursuit would be useless.

A traveller in Central Africa informed me he met several natives who had been mutilated by Spotted Hyænas. The beast is too cowardly to attack a man when awake and active, but should it find him asleep it will sometimes screw up its courage sufficiently to make a sudden grab, and, tearing away a mouthful of flesh, it instantly bolts away. One man had the whole of his cheek thus torn off, and an eye blinded; a second had lost his nose and lips; a third had a large piece of flesh torn from his thigh. Several travellers have recorded instances of natives being similarly mutilated by this beast.

Some of the natives of Central Africa have a habit

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of carrying their dead outside the village, and leaving the bodies on the ground for the hyænas to eat. This they accomplish most effectually, for not a vestige of the corpse remains in the morning, except perhaps a few splintered bones which bear witness to the gruesome feast. This may seem a shocking way to dispose of the dead, but it is nevertheless a very hygienic and safe one, for the micro-organisms which were the cause of death are safely entombed within the body of the hyæna, where they are rapidly killed off and digested.

Although possessed of such fearful teeth and powerful jaw muscles, backed up by great bodily strength, the Spotted Hyæna is generally recognised as one of the most cowardly of animals, and unless brought to bay will not show fight, preferring always to slink off rather than face even a dog much inferior in size and strength, and one, moreover, which it could kill at a single bite.

It invariably attacks large living animals such as donkeys, horses, and cattle from behind, usually between the thighs, or from the side under the abdomen, its object being to tear out the entrails or make an opening sufficiently large for them to escape through, and thus render the victim helpless.

Drummond tells of seven cows which were mortally wounded by one of these hyænas in a single night. The cowardly creature tore the udders completely off.

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So cunning and suspicious is the Spotted Hyæna, that it is usually of little use to set spring guns and traps to destroy it. Poisoning meat with strychnine and leaving it in their haunts is the most effectual way of killing them. When hyænas are in the neighbourhood of a stock breeder, he always poisons the carcasses of any of his stock which might die of disease, and has the carcass deposited at some considerable distance, where hyænas and other troublesome carnivorous animals, scenting it, come and feast upon it.

There is a widespread belief in South Africa and elsewhere that the Spotted Hyæna is hermaphrodite. This, however, is not so. The belief has arisen owing to the external appearance of the reproductive organs of the two sexes being very similar, and without dissection it is difficult for a novice to distinguish the sexes.

It is indeed fortunate for the natives of Africa that this hyæna is of so cowardly a nature, for its bodily strength is so great that it can carry off a full-grown man's body, or that of an adult ass. The tremendously powerful teeth and jaws are greatly assisted by the large muscles of the neck and shoulders.

This animal when captured young can be rendered as tame as any domestic dog, and makes an affectionate pet, responding freely to caresses. It never loses its nervousness, and any unusual noise or the sight of a strange dog will cause it to bolt away and



Photo: W. S. Berridge.

Spotted Hyæna (Young Specimen)

THE SPOTTED HYÆNA

hide, or grovel on the ground behind its master. In Abyssinia, where the towns and villages are surrounded by walls, the hyænas do all the scavaging, and take the place of a sanitary service. The inhabitants leave holes in the city walls, through which the hyænas creep in the dead of night to eat up the refuse. The people before nightfall deposit all their household filth before their doors, knowing full well that before morning the hyænas will have cleared it all away. In the Soudan and many other parts of Central and Northern Africa, battles are frequently fought between rival tribes of natives, Arabs, and others, no effort being made to bury the dead, which indeed would be so much wasted energy, for what remnants of the bodies the hyænas might leave are devoured by other carnivorous animals or carrion birds.

Because of the sanitary services performed by these animals, they are not interfered with in those regions, although they at times destroy numbers of sheep; but so well guarded by the shepherd are the flocks that a chance for a meal of mutton seldom presents itself.

In the Spotted Hyæna we have a remarkable example of an animal possessing prodigious strength, powerful jaws, and terrible teeth, of so cowardly a nature that, should an animal with few if any powers of defence present a bold and threatening front, it will slink away in abject fear. This trait of character makes it clear that a brain centre which is

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strong and active in the lion, tiger, and most others of the cat tribe, is small and inactive in the Spotted Hyæna. If the brain of one of these animals and that of a lion or tiger be compared, it will be observed that the area claimed by phrenologists to be the brain centre which gives rise to aggressiveness and brute courage generally is large and convex in these cats, and comparatively small in the hyæna. The Spotted Hyæna is doomed to extinction in South Africa in the not distant future. Its mission as one of Nature's scavengers is at an end. Civilised man has no need for it, for his advanced powers of intellect have devised better ways and means of rendering harmless all insanitary matter, than allowing it to be eaten up by these skulking scavengers. In the northern parts of South Africa the battle is at its height, and before the hyæna is finally vanquished considerable numbers of domestic animals will fall victims to it, for, lacking carrion which is its natural food, and driven by the pangs of hunger, it takes every opportunity of devouring the stock of the farmer. In the struggle for existence animals, as well as man, change their habits and ways to a remarkable degree, and the Spotted Hyæna is no exception.

In general bulk the Spotted Hyæna is not unlike an adult mastiff dog, but it is very different in shape. The body is massive and bulky in front, tapering off towards the hindquarters, which are about four inches lower than the shoulders. The fur is woolly

THE SPOTTED HYÆNA

and of a soiled yellow ; and numbers of the animals are more or less mangy-looking.

The Spotted Hyæna is so-called because of the numerous black or dark brown, more or less round spots, which cover the entire back and sides. These spots vary a good deal in colour, arrangement, and distinctness.

THE BLACK-BACKED JACKAL

(*Canis mesomelas*)

Also known as the Cape Jackal, Rooi Jakhals, Red Jackal, Golden Jackal ; among the Swazis, Zulus, and Amaxosa it is called the Impungutshe ; Bechuanas as the Pukuye.

THIS well-known Red or Black-backed Jackal is an inhabitant of Africa from the Cape to Middle Nubia, in situations where the environment is suited to its existence.

In South Africa it is very widespread, and in the bush-covered districts it abounds in spite of the most strenuous efforts of farmers to exterminate it.

The jackal is a member of the dog tribe, and so close is the relationship with domestic dogs that there is no difficulty in getting it to breed freely with them.

The Black-backed Jackal is an animal of almost the size of a collie dog, and is nocturnal in its habits. In the wilder districts, however, which are far removed from the European colonist, it is frequently seen abroad during the daytime ; but it has long since learned to dread the white man with his gun,



A Black-backed Jackal and one of a litter of five puppies.

THE BLACK-BACKED JACKAL

and consequently takes the greatest of precautions to conceal itself when he is about.

During the daytime it lies securely hidden in the dense, matted scrub, from which it issues forth at night in search of food, which consists of almost any kind of living creature it is able to overpower, or any carrion it may be able to find. It is a cowardly, treacherous, and secretive animal.

If run down by dogs, the jackal offers little or no resistance, often lying flat upon the ground with its head between its forepaws. At other times it snaps viciously, and is capable of inflicting nasty flesh wounds ; but when seized it seems to become almost paralysed with fear, and meekly allows itself to be killed.

When attacked by small dogs which it realises are afraid to boldly rush in and seize it, the jackal dashes right and left at them, uttering a sharp cackling noise ; and should it succeed in laying hold of one of its tormentors, it inflicts a very severe bite, for its teeth are strong and sharp, and its jaws powerful.

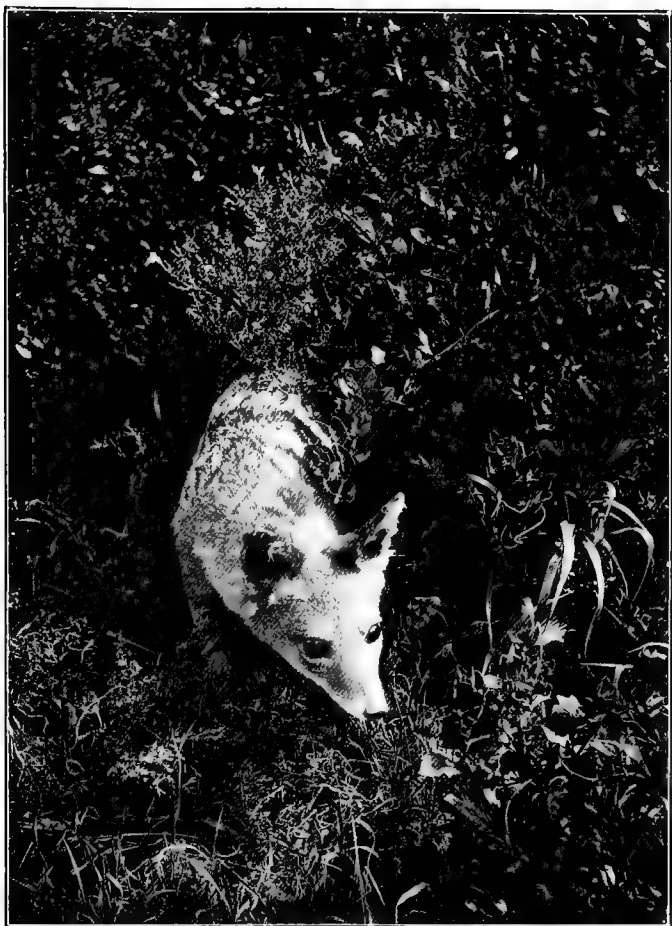
I have never known or heard of a jackal deliberately attacking a man. I have seen instances of old male jackals, when wounded or brought to bay by dogs, offering a most threatening front when the owner of the dogs approached to within a few paces, snapping and clashing his teeth together viciously at him, but not showing any disposition to attack him.

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If captured in the very young puppy condition, these jackals may be rendered as tame as any domestic dog. A friend reared one, and had it for many years. When released from its chain it showed its delight in true canine fashion, racing, gambolling, and jumping up against its master with its forepaws ; or throwing itself on its back on the ground. It followed its owner about like an affectionate dog, but it was necessary for it to be secured on a chain most of the time, owing to a habit it could not overcome of poaching poultry from folk in the neighbourhood.

One day we were out in the veld with this jackal a couple of miles from home, and for a change it was taken off the chain. From out of some bushes adjacent, a youth emerged with a pair of Fox Terrier dogs. These little fellows made a dash at the jackal, which instantly turned tail and fled in the wildest terror, galloping along at its utmost speed, to vanish anon in the midst of some thick thorny scrub a mile distant. Returning home, we saw no sign of the jackal, and concluded we had seen the last of it ; but the following morning it was discovered lying quietly sleeping in its kennel in the yard.

The jackal finds it safer to hide away in the dense tangled undergrowth, than to trust itself to a burrow, unless when hard pressed by dogs, when it generally takes refuge underground, usually in the hole of an Aard Vark ; but if there should be any dense



A Cape Jackal emerging from cover.

Issuing from its leafy lair at nightfall, the Cape or Black-backed Jackal seeks out and devours the young ostriches, kids, and lambs of the farmer.

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bush or scrub within reasonable distance, it makes for it and disregards any holes it may pass.

When the time is approaching for establishing a home and rearing a family, the jackal makes a burrow, or takes possession of a deserted Aard Vark's hole ; and in the bottom of this a family of puppies is reared. Five to six pups at a birth seem to be the average. As many as nine have been recorded.

For the first two or three days the mother stays with the cubs a good deal in the hole, but after that she keeps away in the thick scrub, and returns during the evening and before daylight to suckle them. Sometimes the burrow is made amongst the boulders on the side of a krantz, or some other rocky situation. In these instances the mother jackal enters the hole freely, for she is well aware her human or canine foes cannot dig her out, for nothing less than blasting would avail. A farmer who has for many years past made a practice of hunting for the breeding burrows of jackals with terrier dogs, and digging out the young ones, informs me that only on one occasion did he ever find an adult jackal in a hole. In this instance it was a mother which had just given birth to her litter of puppies.

A rather remarkable fact is the occurrence of young jackals and porcupines in the same burrow. Mr. S. Bonnin Hobson, in the *Cape Agricultural Journal*, writes that he frequently found porcupines and jackal puppies in the same burrow, and that when he dug them out, the puppies took refuge

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behind the porcupines, which killed several of his dogs at different times when they attempted to get at the young jackals behind the porcupine's array of formidable quills.

Young jackals often baffle terrier dogs which are sent into their burrows, by scratching a small side burrow, and blocking up the entrance from the main burrow by scraping dirt into the opening. The dog follows the main burrow to the end, and fails to detect the hidden puppies. If a hole containing puppies is found, and should the finder return in a few hours, or the following day, to dig them out, he will find the burrow deserted. The watchful mother, from the neighbouring scrub, or from behind a bush on the veld, has seen him find the burrow, and the instant he disappeared from view she raced off, and, seizing the pups in her mouth, she carried them, one at a time, to some place of security. Instances have been known of the parents carrying a litter of five or six puppies a couple of miles in a single night. The puppies must have been carried, for they were too young to walk.

Mr. Cloete, the well-known and oft-quoted observer, gives the following interesting account of the jackal's domestic arrangements: "The young ones have almost always a 'back door,' by which they can escape. This is just large enough for the puppies to squeeze through, whatever their size; as a rule as soon as the terriers go down the earth in which there are young ones, they fly out of one



The skull of a Black-backed Jackal, showing the powerful carnivorious teeth with which it tears flesh and crushes bones. The natural size of the skull of an adult is six and a half inches in length.

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of these 'back door' holes through which, as a rule, the terriers are unable to follow; and, should there be no one to intercept them on the surface, make away into the veld as hard as they can. The parents are very rarely found in the holes with the young ones; they are generally lying in the nearest patch of bush, and may often be seen watching the proceedings from a safe distance."

The puppies at birth are little helpless creatures, just like the pups of the domestic dog, and are suckled by the mother until they are old enough to eat solid food. Then both parents diligently forage around in all directions for food for the ravenous youngsters. Nothing in the way of flesh food comes amiss. If the parent jackals should kill an animal which is too large to carry away, they gorge themselves with the meat, and disgorge it for the puppies. If they are able to carry the provender in their mouths, they always do so in preference to swallowing it. When carrion is plentiful, the jackal satisfies its appetite upon it, and does not interfere with other creatures of veld and forest. It is one of Nature's scavengers, and in the past filled an important niche in the economy of Nature. For instance, in the distant past South Africa was swarming with animal life both large and small, and the jackals belonged to what we might term Nature's Sanitary Corps. When an animal died, instead of its body putrefying and poisoning the atmosphere, the jackals gathered in scores and ate up every

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particle of the flesh, and even cracked the bones and licked out the marrow. Should an animal have died of disease and its carcase left on the veld or in the bush to decompose, vast swarms of harmful microbes, alive and active, would have been released to infect the grass and other herbage, or pollute the water, causing frequent epidemics of disease amongst animals.

The microbe-swarmed flesh of the dead animal in the stomach of a jackal is very quickly digested, and thus rendered antiseptic. So the jackal in the past was not only a useful agent in keeping the air wholesome and pure, but in addition acted as a check on the spread of infectious diseases. It still renders excellent service to natives in many parts of Africa, who would otherwise suffer far more than they do from diseases due to their ignorance and carelessness in regard to the disposal of infectious matter. In the past, jackals picked up a good living by acting the part of camp followers to the herds of game animals, knowing full well that in their frequent battles the males often maimed or killed one another. These dead or crippled animals soon vanished into the stomachs of a horde of skulking jackals.

Ever and anon one of the herd of antelopes would be killed by a lion, and, after satisfying his appetite, he and his mate would retire for a drink, and then away to their lair for a doze, leaving the remainder of their repast to the jackals.

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When lions are out on the prowl for food, the jackals are not far off ; and when the lord and lady of the forest are satisfying their appetites off the flesh of some animal they have slain, the hungry jackals skulk around in the neighbouring bushes, or at a respectful distance out on the veld ; and the instant the lions retire they rush in and eat up every morsel of the leavings.

Hunters are often dreadfully pestered by jackals, which take every opportunity of chewing up the reims, which are the softened thongs of animal hide for securing the oxen, &c. When a hunter happens to kill an animal many miles from his camp, he on his return some hours later with pack animals or a cart, finds, perchance, nothing but a skeleton and a crowd of jackals fiercely quarrelling over the marrow bones.

A hunter invariably has a crowd of jackals surrounding his camp at night, attracted by the smell of the flesh of the game animals he has killed.

In the absence of carrion, the jackal kills and devours any living thing which is unable to resist. So cowardly, however, is it, that animals considerably smaller than itself which are courageous and fight fiercely, the jackal leaves severely alone. The smaller antelopes, hares, game birds, their young and eggs ; lizards, rats, mice, small tortoises, insects, and in fact any of the numerous more or less defenceless creatures of veld, forest, and mountain it preys upon.

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Since the advent of the European colonist into South Africa, the antelopes and larger carnivorous animals have been considerably reduced in numbers, and in consequence the jackal's menu has shrunk alarmingly, for it depended to a considerable extent upon the bodies of the sick and crippled antelopes, or those killed in combat, as well as the leavings of the large carnivorous animals. Its main source of food being thus cut off, the jackal seeks to make a living by helping himself to the colonists' domestic animals. As a destroyer of the smaller antelopes and game birds, the jackal has few rivals. However, these creatures are jealously guarded by man, not because of their economic value, but to afford him the pleasure of hunting and killing them; therefore, if destruction of game was the only damage done by the jackal, it would in no way retard the development of the country.

The jackal is one of those animals which have been of much service in Nature's evolutionary processes, but when Man the Masterpiece makes his advent with his flocks and herds, the jackal is no longer needed, and consequently becomes one of those animals which sentence of death must be pronounced upon. In Great Britain the relatives of the Cape Jackal have been exterminated by man after a long and arduous conflict, and the process of elimination is proceeding rapidly in other countries.

In South Africa the fight is being waged all over

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the country, which in course of time must inevitably end in the extermination of the jackal. However, owing to the nature of some portions of the country, the time will be far distant before that desirable end can be attained.

The weapons of the colonist, in the shape of fire-arms, dogs, traps, and poison, are opposed by the jackal with a brain developed to a high pitch of cunning, the acutest of hearing, sight, powers of scent and taste. With these faculties, combined with the cover which the dense, matted, thorny scrub affords him, the jackal has so far not only been able to hold his own in the battle in many districts, but has actually considerably increased in numbers.

To trap a jackal, extra special precautions must be taken, and even so it is doubtful if the animal will be captured, so suspicious has it become. When a jackal sallies forth in search of a meal, all its faculties are keenly on the alert. If man learns by experience, so too does the jackal.

Even poisoned bait is frequently unsuccessful, for the reason that the jackal's senses of taste and smell being so highly developed, it easily detects the poison and refuses to eat the bait.

Strychnine is the poison usually employed. A plan which meets with a fair share of success is to make balls of fat about the size of marbles, in the centre of each of which a fatal dose of strychnine has been introduced. These are placed

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in a bag, and taken to the haunts of jackals. They are then taken up one at a time with a pair of forceps, or some other contrivance, and singed to destroy all human smell or scent. They are then placed under a bush where the sun cannot melt them. This plan frequently fails, for the jackal often detects the human scent left upon the ground by the feet of the placer of the poisoned bait. A better plan would be to remain mounted on a horse, and drop the prepared bait without dismounting, after carefully singeing it. If in addition a lump of decaying meat were trailed along the track taken by the rider, a jackal, picking up the scent, would follow it to the places where poisoned bait was lying.

The use of poison in this way at times does much mischief, for the smaller carnivorous animals and some useful birds eat the poisoned bait and perish. Some of the species of small carnivorous animals do a considerable amount of service to man, for their chief diet consists of rats, mice, and noxious insects. The Secretary Bird frequently falls a victim to the poisoned bait laid for jackals ; and all observers of the habits of this bird cannot but admit that it fulfils an important mission in the economy of nature, and is of much economic value to man. On reference to the back numbers of the various South African agricultural journals, there may be found an abundance of writings on the destructiveness of



The cunning and destructive Black-backed Jackal or Rooi Jakhals (*Canis mesomelas*) with which the South African farmer is at war. These jackals grow as big as Collie Dogs.

THE BLACK-BACKED JACKAL

the jackal, and the various methods suggested and employed to get rid of it.

The jackal is at the present time the worst form of vermin with which man has to contend in his struggle to colonise South Africa. Regarded from an economic point of view, the jackal has few virtues. The only real service he renders us is the destruction of rats, mice, and some kinds of noxious insects, including that dreaded pest the migratory locust.

We cannot blame him for refusing to die of starvation so long as there are tender lambs, kids, poultry, and young ostriches to be had, for we have robbed him of his birthright in the shape of the various game animals and birds. However, as man spreads over the land the jackal must vanish, for the two cannot live in proximity in peace. It is but the operation of the law of the survival of the fittest.

The Cape Jackal has developed a new vice. It has discovered that by banging ostrich eggs against each other, or on stones, it can break them and so gain access to the nourishing contents. So secretive and cunning is the jackal, that it is often able to quietly steal the eggs from beneath the sitting birds during the hours of darkness, and rolling them quietly away by gentle pushes with its nose, and finding a convenient stone, they are broken by being tilted against it.

In several parts of the country where the nature

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of the ground and bush makes it possible, the jackals are hunted more or less successfully by men on horseback, accompanied by packs of hounds. In the neighbourhood of Port Elizabeth, jackals are still quite plentiful, and may occasionally be seen after sundown. However, a momentary glimpse is usually all that is obtained, for the eyes, nose, and ears of a jackal are three highly-developed avenues through which it becomes acquainted with the approach of enemies.

At dusk one evening, as I walked in the vicinity of some dense thorny scrub at Port Elizabeth, a Grysback antelope, in its haste and terror, almost collided with me. It had barely vanished into the bush before two jackals, with noses to the ground, broke through the bushes at the spot where the buck had appeared. Their pace carried them a couple of yards or so out into the open, and, catching sight of me, they swerved round, and in an instant were gone. They had evidently been very hot on the trail of the little buck.

When camped out under a creeper-covered shrub in the forest, wrapped in a waterproof blanket and with a couple of faithful dogs to do sentry duty, the low wailing cries of the jackals, which at intervals break the stillness of the night, sound almost uncanny. It begins with a mournful wail, and ends with what might be construed into a cynical laugh. My companion on one of these occasions was a young man who had never slept anywhere but in a

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comfortable bed in his home, with the knowledge that a policeman was on the beat outside to guard him from harm. I obtained little or no sleep that night, for, whenever a jackal cried out, an owl hooted, a wild cat screamed, or the Bush Babies rustled the branches overhead, he would start up with an exclamation of alarm and grab hold of me. However, after a few weeks he grew so used to the strange and weird noises of the veld and forest by night, that he slept peacefully.

When brought to bay, the jackal utters what Mr. Cloete describes as a quacking or cackling noise. When desiring to attract the attention of the puppies, it gives vent to a low grunting kind of sound, or perhaps better described as a series of low muffled barks.

Jackals usually associate in pairs. Often a mother jackal may be observed hunting with her last litter of puppies, which she is teaching to hunt. At such times they are particularly bold and destructive. A farmer relates an instance of a mother jackal and five half-grown pups killing fifty out of seventy-five valuable Angora kids in a single night. Only one or two were eaten. The rest were killed, and left upon the veld. On another occasion eleven goat kids were killed within a few hundred yards of the kraal, by a single jackal. None of the bodies were touched, the jackal having evidently become alarmed. One carcass was poisoned with strychnine, and the following night the jackal

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returned and dined, and in the morning was found dead. The destruction wrought to the stock of the farmer by jackals, especially in the Cape Midlands, is immense.

The only way by which a farmer in jackal-infested districts can succeed in saving his stock, is to erect what is known as jackal-proof wire fencing, and shutting up his stock in secure kraals at night.

In the past, the Cape Government paid 7*s.* 6*d.* each for jackals' tails, and, although hundreds of thousands of pounds were spent, the jackals increased in numbers. Until the country becomes more thickly populated, and the vast masses of dense, thorny scrub and prickly-pear-covered lands are cleared, the jackal will continue to thrive and levy toll upon the pioneer farmer.

The pelt of the Black-backed Jackal is utilised by the natives for making karosses. It suits this purpose admirably, for the fur is close, soft, and thick, and the blackish silver-spangled back, bordered with red, has a handsome appearance. In size this jackal is slightly larger than an adult English fox, and is very similar in shape. The whole of the back is covered with what seems to be a black patch interspersed freely with grey. However, on close examination of the under fur of the back, it will be noticed to be fine and woolly, and reddish-yellow in colour. Beyond this, long hairs grow which are black at the tip and base, with the median portion

THE SIDE-STRIPED JACKAL

white. The sides of the body are bright rufous. This does not blend with the grey-black of the back, but is separated by a black line. The head is rufous, tail long and bushy, the hairs of which are yellowish at the base, with black tips, which is more pronounced near the end of the tail, making it appear black.

THE SIDE-STRIPED JACKAL

(*Canis adustus*)

THE Side-striped Jackal is unknown in the Cape Province. It is found in Zululand and the Transvaal, and extends northwards through Rhodesia to Central Africa.

I have, so far, not observed this jackal in the wild condition, but it is stated to hunt in packs, except when persecuted by man, when it takes to dense cover, and separates in pairs or roams about singly. Occasionally a mother and her half-grown cubs are seen.

These jackals prey on any kind of animal they are able to overpower, and also on any form of carrion, and even insects. They are stated to be partial to the fruit of the oil-palm. Like its cousin the Black-backed Jackal, this species is easily tamed, and will breed freely with domestic dogs.

The following careful description by W. L. Sclater,

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in the *Fauna of South Africa*, will enable the reader to identify this jackal :

“ Form rather stout ; general colour silvery grey, rather blacker on the back ; on either side of the body a more or less distinct diagonal white stripe, with a similar black one bordering it below ; the hair on the back is long, from three to four inches, and consists of a rather coarse, pale reddish underfur, beyond which project longer black hairs with a broad white sub-terminal band ; the regular arrangement of the bands on these long hairs causes the side stripe ; head speckly-grey with a rufous tinge, ears short, about three inches long only, posteriorly the same colour as the head, anteriorly with a few long white hairs ; chin pale brown contrasting with the rufous-brown throat and chest ; limbs with a slight rufous-brown tinge and traces of a black transverse band above the hocks on the hind legs ; tail about half the length of the head, and body covered with long hairs, but not so brush-like as in the other species ; basal third yellowish, distal two-thirds mingled black and yellowish, tip pure white.

“ The female is considerably lighter in colour, much less rufous, and with the side stripes very faintly marked.”

It is not, however, usually necessary to puzzle through all the above detail to recognise the difference between the two species. The following is the chief difference :

THE SIDE-STRIPED JACKAL

Black-backed Jackal—Back silvery black, sides of body and legs rufous, tail bushy and blackish for the greater part of its length.

Side-striped Jackal—Whole body silvery grey, somewhat darker on the back; a diagonal white side stripe.

THE SILVER FOX OR VAAL JAKHALS

(*Vulpes chama*)

Also known as the Cama Fox and Draai Jakhals ;
Basuto—Mopheme.

FOXES are members of the carnivorous or flesh-eating class of animals, and are close relatives of the wolves, jackals, and dogs. Foxes inhabit North America, Europe, Asia, and Africa. They are even found in the Arctic Regions.

In South Africa there are two kinds or species. One is the beautiful little Silver Fox, otherwise known as the Vaal Jakhals. Although generally distributed throughout South Africa, it is nowhere common. It is confined to Africa south of the Zambesi, including Namaqualand and Bechuana-land. The Silver Fox is slender and graceful in appearance. It is partial to the more open, dry districts, and is nocturnal in its habits. During the daytime it usually lies hidden in a lair on the ground in the midst of a thick bush, tall grass, or whatever suitable shelter the neighbourhood affords. A favourite hiding place is the thick, matted, thorny scrub, so common in South Africa. These bushes

THE SILVER FOX OR VAAL JAKHALS

are so thick and thorny that only animals of slender build are able to creep in under them.

The deserted holes of Aard Varks, when available, are taken possession of by Silver Foxes. In these, or in burrows excavated by themselves, the young are born and reared. A common custom of this fox is to enlarge the deserted burrows of Springhares, and other animals whose holes are too small for the requirements of the Silver Fox.

This fox is rarely seen by man, owing to its nocturnal habits, its timid, wary, and secretive disposition, and its yellowish fur, which blends so closely with its surroundings. For these reasons, and the fact that it does not molest domestic animals in any way, comparatively little is known of its habits.

From the nature of the country it inhabits, combined with its extremely timid character, there can be no doubt but that rats, mice, lizards, insects, berries and bulbs constitute its chief diet. In captivity it soon becomes tame, but retains its timid nature. The slightest noise of an unusual kind will cause it to start convulsively. The sudden apparition of a dog sends it into an extremity of fear.

The Silver Fox usually produces its litter of pups at the side of or under a stunted shrub on the open, dry, sun-baked veld.

One which I had in captivity ate freely of a mixed diet, consisting of most of the usual foodstuffs eaten by man.

Fruit, boiled bread and milk, mincemeat, and

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mice were always appreciated. Once when locusts were abundant I let it loose, and its activity in seizing and devouring these pests was great. It had evidently been in the habit of eating them when in the wild condition, for the instant it saw them it became greatly excited. Leading it by its chain over the site of a colony of underground termites or "White Ants," it at once began to dig, and after an interval succeeded in scraping out a flattish piece of clay, which it nipped. That bit of clay proved to be the royal cell of the queen termite; and with the greatest of eagerness the fox drew out the creature's fat body, which was as big as a man's thumb, and greedily ate it up. It then licked up a goodly number of termites with its tongue, and resisted when I drew it away, having satisfied myself that termites constituted a portion of the diet of Silver Foxes.

This fox never showed any disposition to attack adult fowls. Once it lay concealed under a bush watching a brood of newly-hatched chickens. One of these lagged behind its mother, and the fox made a rush and seized it in its mouth. The chicken chirped in distress, whereupon the mother hen flew at the fox and attacked it so fiercely that it instantly dropped the chicken and fled in wild alarm. For nearly a day it lay hidden in a neighbouring bush, and refused to come in answer to my calls. It never again showed any disposition to make a meal of a chicken.



The Silver Fox or Vaal Jakhals (*Vulpes chama*). This handsome little fox inhabits the open country all over South Africa, but is nowhere common. It is about the size of an extra large domestic cat.

THE SILVER FOX OR VAAL JAKHALS

Having never been known to interfere with man and his possessions, this gentle little fox should not be wantonly persecuted. It at the present time fulfils a duty which is of much importance to man, in helping to keep in check hosts of injurious insects, including the destructive Migratory Locust and some of the most troublesome of the species of termites. In addition, it renders valuable service in reducing the numbers of rats and mice native to South Africa, as they breed with alarming rapidity, and, in consequence, unless preyed upon by many enemies would rapidly become a curse to the farmer.

The time will probably come when these foxes, and a number of other species of our native animals which are at present rendering us such valuable service, will have served their purpose. They will have accomplished the work for which the Creator evolved them, and will take their place among the many creatures which God has no further use for in the great work of the Evolution of Man.

So long as there are vast stretches of sparsely populated country, it is exceedingly unwise for man to thoughtlessly interfere with the balance of Nature in the animal kingdom.

The name *Draai*, which is a South African Dutch word meaning "turn," is given to this animal owing to the hare-like swiftness with which it can double or turn when racing at full speed.

The Silver Fox can easily be distinguished from any of the jackals by its more slender build, thin

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pointed muzzle, big bushy tail, and large ears. Its colour is fawny-yellow with a silvery appearance on the back. The tail has a reddish tinge and is black at the tip.

DELALANDE'S FOX

(*Otocyon megalotis*)

Also known as the Cape Fennec ; Desért Fox ; Bakoor or Basin-eared Jackal ; and by the Bechuanas as the Motlose

DELALANDE'S FOX inhabits the western parts of South Africa, and extends through Central Africa as far as Somaliland. It is not apparently confined entirely to the dry western parts of the country, for it is known to occur in the eastern portion of the Transvaal. Numbers of specimens have been procured from Griqualand West.

It is an inhabitant of the dry, open country, and is met with either singly or in pairs.

In the wild state its food consists of rats, mice, locusts, termites, and other insects, supplemented by the eggs and young of ground birds and berries, fruits and bulbs.

In captivity it is omnivorous, eating freely of fresh vegetables, fruits, meat, bread and milk, &c.

When captured young this fox can easily be tamed, and will follow its owner about like a dog. A friend



The Desert or Delalande's Fox, which inhabits the western parts of South Africa. This one belonged to Mr C. Stewart, and followed him about like a pet dog.

DELALANDE'S FOX

had one of these foxes which he captured out on the karoo at Prieska. It was one of a litter of five which he caused to be dug out of a deserted hole of an Aard Vark. At the time my friend possessed a cat which had recently given birth to some kittens. He drowned the latter, and after the bereaved mother cat had been allowed to pine for her kittens for a day, he diplomatically introduced the little helpless fox puppy to her, and to his delight she immediately adopted and suckled it as if it had been her own kitten. It soon grew strong and became extremely playful, and it was indeed a pleasing sight to see the graceful little creature romping around, racing off full speed, doubling rapidly round a bush, dashing back, tumbling, rolling and springing into the air in a very abandonment of light-heartedness. There was an old rooster which stalked around in a lordly sort of way. The fox teased him most unmercifully. Secreting itself, it would suddenly bound out and make pretence of springing on the old cock, and in a variety of other ways giving shocks to the poor old fellow's nervous system, so that in time he got that he was almost afraid of his own shadow. The fox never attempted to injure any of the poultry. It could not be trusted, however, when young chickens were about, and when an opportunity occurred it would snap one up and steal off quietly and furtively into cover, eat up the dainty morsel, and come out looking unconcerned and innocent.

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This tame fox was horribly afraid of strange dogs, and the sight of one sent it into an extremity of fear, and at such times it would dash madly away, making for the nearest cover, and once it obtained sanctuary nothing could induce it to show itself for hours afterwards. One day my friend was walking along a country road with his foxy chum trotting behind him when, from a neighbouring Kafir kraal, a mongrel dog dashed out. The fox made off full speed in the opposite direction, and was lost to view in a dense belt of thorny bushes. For hours its owner sought for it, ever and anon calling its name and clapping his hands, which was the signal it had been taught to respond to. The following day the entire bush was searched, but no trace of the fox could be obtained. On the morning of the third day my friend was gratified, on going out of his room, to find his chum, the fox, out in the yard. When it saw its master it was wild with delight. With age it became more confident, and used to make long excursions alone over the veld in search of insects and other small forms of life, and one day it wandered farther than usual and was suddenly confronted by a man with a gun who, mistaking it for a wild fox, shot and killed it. About a week later my friend happened to call at the farm of the man who shot the fox, and in the course of conversation he went on to relate how he had shot a wonderful fox-like animal out on the veld, and proudly produced the skin. My friend recognised it as the skin of his



Skull of Delalande's Fox. Compare the teeth of this fox with those of the Cape Hunting Dog or *Hyæna*. The teeth of each species of animal differ in size, shape, and number. Animals are classified to a large extent by means of their teeth.
(Skull two-thirds natural size.)

DELALANDE'S FOX

little chum, and what he said to that farmer had better not be repeated.

This species of fox was first brought to notice by a French traveller of the name of Delalande, and was named Delalande's Fox in consequence. It is nocturnal, but occasionally ventures forth by day in the more secluded parts of the country. So great is its fear of man that when living in his vicinity it is strictly nocturnal. It is an innocent, inoffensive animal, and there are no authenticated instances of it ever having attacked domestic animals. It is a creature which certainly should be protected, for the reason that it destroys rats, mice, and noxious insects. In those districts where the termite or "White Ant" abounds it subsists almost, if not entirely, upon these insects. However, whether an animal is useful or not does not seem to weigh in the slightest with many people, whose sole idea of the lower animals is that they furnish a legitimate means of gratifying a destructive animal instinct which is inherited from our barbarian ancestors. The native races in South Africa hunt and kill the animals and birds of the country indiscriminately, and unless this senseless slaughter is checked, numbers of birds and animals which are fairly common to-day will, within the next fifty years, be either extremely rare, or actually extinct in South Africa.

Delalande's Fox, for instance, which is so good a friend to man in a variety of ways, is relentlessly

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hunted by the natives of Bechuanaland, who utilise its skin for making karosses.

A full-grown specimen of this fox is of about the same size as an English fox. Its body and legs are slender and graceful. It has a beautiful coat of thick and rather long fur, silvery grey in colour, the under-fur being pale yellow ; legs black, tail bushy for its entire length, and black at the tip ; ears very large. Average length of body, two feet.

THE CAPE HUNTING DOG OR WILDE HONDE

(*Lycaon pictus venaticus*)

Known to the Zulus as the Inkentyane (*Drummond*) or Inkentshana (*Kirby*) ; the Swazis as the 'Budaja (*Kirby*) ; Basutos, the Matshabidi (*Kirby*) ; Amaxosa, the Ixwili (*Stanford*)

Books of travel and hunting in South Africa make frequent reference to this formidable wild dog, which scours the country in packs of from a few individuals to half a hundred or more. However, the usual number in a pack is a dozen to twenty, for the reason, no doubt, that in small bodies they are enabled to hunt down their prey more efficiently, and as it generally takes the shape of a large antelope, there is sufficient to satisfy the appetite of each of the dogs.

The Cape Hunting Dog occurs in all parts of Africa from the Cape of Good Hope to Somaliland and Abyssinia.

These wild dogs are ever on the move. To-day a pack may be in one locality, and to-morrow, fifty or a hundred miles away.

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In the distant past they served a good and useful purpose in checking the too rapid increase of the game animals, which would otherwise have increased in numbers to such an extent that the vegetation of the country would not have supplied their needs, and starvation, dire and complete, would have overtaken them. In those days the wild dogs had few, if any, natural enemies. True, a lion could easily master one if it should happen to be caught alone, but the lordly lion disdained the flesh of the wild dog, and only attacked it at such times as when, in the act of devouring some animal it had killed, the wild dogs became over venturesome in endeavouring to snatch up a mouthful or two of the meat.

The males fought fiercely amongst themselves, and in this way, no doubt, numbers were killed. However, they were probably kept in check mainly by disease epidemics.

On the advent of the pigmy Bushman, the Wilde Honde for the first time had a serious and formidable rival. The Bushmen were a race of hunters. They knew not the art of tilling the ground, nor did they tame and rear animals for food. They were in what is known as the Hunter phase of culture or development, and, like the Wilde Honde, they hunted the game animals of the country for food.

The Wilde Honde and the Bushmen were bitter enemies, for they were rivals, and frequently came in contact in consequence. The dog was no match for the nimble Bushman, armed with a bow and

CAPE HUNTING DOG OR WILDE HONDE

quiver full of poisoned arrows, the slightest puncture from one of which resulted in death.

When the strong and warlike Kafir tribes swept down from the north and spread over South Africa, the wild dog had a still more formidable enemy, for they had a habit of gathering together in great bodies and making organised attacks by surrounding packs of these wild dogs which made such persistent attacks upon their stock. Lacking firearms, the Kafirs, however, could not make much headway against such fleet and cunning enemies, and, acting on the defensive, they resorted to carefully shutting up their stock in kraals at night, and guarding them during the daytime when at pasture.

When the European colonist made his appearance in the country, he found it overrun with Cape Hunting Dogs, which are as big as an average-sized mastiff. These large, powerful, fleet and cunning animals ever and anon swooped down upon his flocks and herds and devastated them. Should the shepherd doze and allow his flock to wander to a distance, a pack of wild dogs, which had been watching from afar, with a swinging but swift gallop would dash among the sheep or goats, and even if the shepherd should appear almost at once upon the scene, these bold and bloodthirsty animals will already have mortally wounded scores of them. They are never content to attack and devour a few. Once in the midst of a flock of sheep or goats, they kill and rend until the ground is drenched with

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blood and strewn with their dead and dying victims.

So bold were they in the past that the presence of a shepherd was often ignored. Watching their opportunity, a dash would be made from out of some adjacent cover, or from over a hillock, and within five minutes a score of sheep would be slain and partly devoured before the cries of the shepherd and the firing of his gun frightened them off. So closely does the colour of their fur blend with the karoo veld that, when lying flattened out on the ground, they are invisible at a comparatively short distance. Lying thus they watched for an opportunity to make a dash. At other times, lying just over the crest of a low hill, or concealed amongst the loose stones on a hillside, they lay for hours watching the flocks and herds out upon the veld below. Many a chance presented itself of snapping up cattle, sheep and goats which had strayed a short distance away from the others, for the shepherds were invariably careless and irresponsible Hottentots.

So bold were they that they have been known to make a dash at a herd of cattle quietly feeding within a hundred yards of the homestead, and singling out a beast drive it off into the bush or over some rising ground and devour every mouthful of its flesh before a horse could be saddled to follow them up.

A Dutch friend in Natal told me that in the

CAPE HUNTING DOG OR WILDE HONDE

early days in Umvoti County he was sitting on his stoep conversing with his son when he observed some swiftly-moving objects appear over the brow of a low hill about a mile distant. He seized his telescope, and sure enough they were a pack of wild dogs making straight for his sheep grazing peacefully out upon the grass veld. He and his son, hastily arming themselves with a gun each, dashed for the stable, and saddling the horses rode off at a full gallop, discharging their guns as they rode. When within a couple of hundred yards the hounds fled and disappeared with a swift, swinging gallop. The sheep were rushing about in a state of the wildest terror. The veld was strewn with dead and dying animals, and others running about with large pieces of flesh either torn out of their bodies or hanging in ribbons. Sixty-nine sheep was the total number done to death by this pack of hounds, which numbered about fifteen.

The hunting habits of these wolf-like dogs cannot be better described than in the words of Mr. Drummond :

“ It is a marvellous sight to see a pack of them hunting, drawing cover after cover, their sharp, bell-like note ringing through the air, while a few of the fastest of their number take up their stations along the expected line of the run—the wind, the nature of the ground, and the habits of the game all taken into consideration with the most wonderful skill. Then to see them after they have

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found, going at their long unswerving gallop so close together that a sheet might cover them, while those which had been stationed or had stationed themselves, it is hard to say which, drop in one by one as the others find themselves unable to make the running any longer; and the chase, generally a Gnu or Waterbuck, pressed first by one and then another, though it may distance the pack for awhile, soon comes back to it, and in the end is almost invariably run into."

Mr. F. C. Selous describes a most unusual incident, viz., a single hound chasing an antelope. He and his friends once in Bechuanaland were watching a Sable Antelope, and on observing it suddenly throw up its head and start off at a gallop, says: "We saw that an animal was running on its track, and although still distant was overhauling it fast, for the Sable Antelope, not being pressed, was not yet doing its best, so that when it was about two hundred yards from its pursuer, which we now saw was a wild dog, was not more than fifty yards behind us. The noble-looking antelope must just then have seen us, for it halted, looked towards us, and then, turning its head, glanced at its insignificant pursuer. That glance, however, at the open-mouthed dog thirsting for its life-blood must have called up unpleasant reminiscences, for, instead of showing fight as I should have expected, it threw out its limbs convulsively and came dashing past us at its utmost speed. It was, however, to



The Cape Hunting Dog, which is as big as a mastiff.

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no purpose, for the wild dog, lying flat to the ground as a greyhound, its bushy tail stretched straight behind it, covered two yards to its one, and came up to it in no time. It just gave the antelope one bite in the flank, and letting go its hold instantly fell a few yards behind. At the bite the Sable Antelope swerved towards us, and upon receiving a second in exactly the same place turned still more, so that, taking the point on which we stood as centre, both pursuer and pursued had described about half a circle round us, always within two hundred yards since the Sable Antelope had first halted. As the wild dog was just going up the third time it got our wind and, instead of again inflicting a bite, stopped dead and looked towards us, whilst about a hundred yards from it the Sable Antelope came to a standstill. The baffled hound then turned round and made off one way, while the Sable Antelope, delivered from its tormentor, cantered off in another."

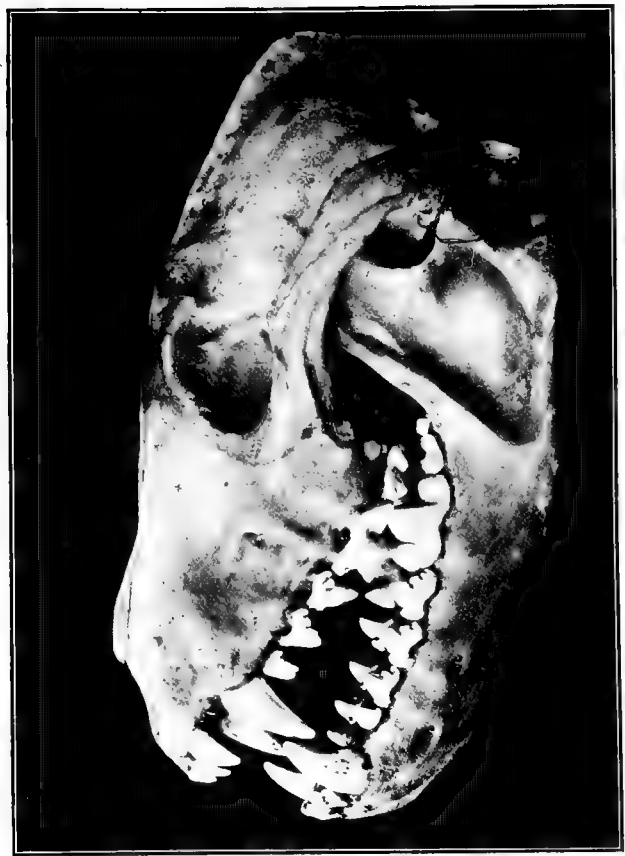
Mr. Selous mentions that this is the only occasion on which he saw a Cape Hunting Dog pursuing an animal unaccompanied by others. In the unsettled parts of South Africa these dogs still cause much loss to farmers, attacking sheep, goats, cattle, and ostriches. However, it is now exceedingly wary, and has in most districts taken refuge in the forests, such for instance as the Addo Bush near Port Elizabeth. In Rhodesia they are very plentiful, and harry the pioneer farmers considerably. In

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fact in many parts, stock farming is rendered quite unprofitable owing to the depredations of these dogs. Statistics show that in Southern Rhodesia 109 wild dogs were killed in the year 1911.

The number of puppies at a birth on the average is the same as with domestic dogs. Often, however, as many as ten or twelve in a litter have been found. They are born and reared in a burrow dug in the ground out on the open veld. These are connected with each other by subterranean passages. Frequently the deserted holes of the Aard Varks are utilised and altered to suit the requirements of the animal. Like the Cape Jackals, the adult wild dogs do not take refuge in these burrows, but when pursued at once make off to the nearest patch of bush, finding sanctuary in the dense, thorny thickets, which are impossible of penetration by the pursuer.

It is not often at the present time we find the burrows out upon the open veld. They are excavated within the precincts of the dense, thorny scrub which abounds in South Africa. Animals rapidly learn by experience. These dogs, for instance, know full well that now the country is overrun with a deadly foe in the shape of man, it would be courting death for them to attempt to rear their families out upon the open veld. Like the human race when confronted for the first time with some altogether new form of danger, the lower animals are at a loss how to act, and numbers of them perish,



The skull of a Cape Hunting Dog, showing the formidable array of teeth, which are its only weapons of offence and defence. (Skull one-half natural size.)

CAPE HUNTING DOG OR WILDE HONDE

but they soon learn how to cope with and overcome, or at least considerably minimise the effects of the new source of danger to their kind. For this reason there is much disagreement amongst naturalists and others as to the ways and habits of the lower animals, because in one part of the country they in many respects differ considerably in their habits, owing to local circumstances. Game animals, for instance, which in the past were invariably found out upon the open veld, now haunt the dense forests and bush-veld, owing to being hunted and shot.

The powers of endurance of the Cape Hunting Dog are astonishing. The swiftest of antelopes are run down by them. Keeping together in a compact mass, they gallop steadily along and never seem to tire, and although the pursued animal may be fleetier than they, yet possessing greater endurance they invariably succeed in tiring it out.

The average man imagines that, unless he is fortified with nourishing food every few hours, his strength will wane and he will be incapable of either mental or physical labour. The wild dog will scour the country for days, doing perchance over a hundred miles a day in quest of food, on a perfectly empty stomach. The food of these dogs, as a general rule, is well earned. To procure a sufficiency, great physical exertion is put forth, combined with considerable exercise of mental power. This strenuous life is necessary for the maintenance of

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the health of flesh-eating animals. When a regular and abundant supply of flesh food is forthcoming, with but little physical effort, carnivorous animals grow mangy and otherwise diseased, for the reason that the toxic substances generated in the body by a flesh diet are not eliminated.

Those of the human race who eat largely of flesh food, and who do not do heavy manual labour, bring ill-health in various forms upon themselves, in the same way as do the carnivorous animals. With the wild dogs it is always a feast or a famine. The stomach may be loaded to its utmost capacity at times, but it goes for days at a time empty. Many of the human race load their stomachs every day of the year and yet expect to remain in a condition of health.

All observers who have come in contact much with these wild dogs are unanimous in their statements that they tear up and devour their prey in the most expeditious way, biting out great mouthfuls of flesh and bolting it whole. A pack of a dozen of these hounds will eat up a large antelope within fifteen minutes. The larger animals are usually attacked just below the tail, the endeavour being to tear out the bowels and thus completely cripple the hunted creature.

In those parts where wild dogs have not from experience been taught to dread man and his fire-arms, they do not show any great fear of his kind, for when molested they usually slowly and sullenly



A Cape Hunting Dog or Wilde Honde on the watch for a meal. Lying concealed behind a stunted bush, this formidable hunter of the plains dashes out at a passing antelope and runs it to earth.

CAPE HUNTING DOG OR WILD HONDE

retire. Instances are on record of them attacking and devouring natives, as do their cousins the wolves in Russia at the present day. Europeans on foot have frequently been threatened by them, but they seem to have a great dread of man on horseback. The reason, no doubt, is that horses are associated with men carrying firearms, for hunters seldom venture out into the wilds on foot. An unarmed man on foot would stand no chance against one of these large and powerful wild dogs, if it thought fit to attack him.

When taken captive as puppies, wild dogs can be tamed very effectually, but the evil character of their kind sometimes asserts itself. It is stated that when crossed with domestic dogs the offspring is a mongrel of bad character.

The Cape Hunting Dog is an animal which has served its purpose in the economy of Nature. Wherever man settles down to take possession of the land, this dog is one of the creatures which he must spare no effort to destroy, for, until they are all exterminated, he cannot live in peace. It is an animal doomed to extinction, and rightly so, for from a human point of view it is without a redeeming trait of character.

Its work before the advent of man was a good and useful one. Man has replaced it, and the two cannot live in proximity.

In shape the Wilde Honde is wolf-like. The hair is short and in many it is scanty. The general

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body colour is dull ochre yellow, with irregular dark-brown patches and sundry blotches of the same colour. The markings vary a good deal in different individuals according to the local race to which they belong. The white brush at the end of the tail, however, is common to all. The height of a full-grown Hunting Dog at the shoulder is about two feet three inches ; length, four feet from the nose to root of tail ; tail to the end of terminal hairs, fourteen inches.

There is a local race or sub-species of Cape Hunting Dog in the north-east of South Africa, viz. *Lycaon pictus zuluensis*.



A Cape Hunting Dog in the act of devouring a Bush Buck ram.

THE CAPE OR CLAWLESS OTTER

(*Aonyx capensis*)

Syn. : *Lutra capensis*

Intini of Swazis and Zulus (*Kirby*) and Amaxosa (*Gloete*);
Itini of Basutos (*Kirby*)

THE Cape or Clawless Otter inhabits Africa from the Cape to the Soudan. In South Africa it is widespread, and may be found on the margins of rivers, ponds, and marshes in all parts of the country. It is often met with on the sea coast in places where there are no rivers, or ponds other than the rock pools containing sea water. In these situations it subsists on the crustaceans, small marine fishes, and other creatures left by the outgoing tide in the shallow water amongst the rocks on shore. If such food should not be sufficient for its needs, it ventures out short distances from the shore in pursuit of larger fishes, which, when captured, are brought to shore and devoured.

The Cape Otter is nocturnal, except in secluded districts, where it often ventures forth during the daytime on cloudy days, and early in the morning, and towards sunset.

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The lair of the otter is amongst the dense bushes, reeds, or brushwood at the margins of the rivers, ponds, &c. If the banks are rocky, it sometimes takes refuge under ledges of rock, or in cavities. They do not excavate holes.

Otters are often seen in parties of from three to five, and it has been assumed they associate for hunting purposes. This may at times be the case, but I have frequently watched otters, while lying unobserved, and always either saw them singly, in pairs, or a pair with from two to three cubs. The cubs remain with the parents till nearly adult, if the locality affords sufficient sustenance for all. If not, the cubs are driven off to a distance. In any case, when adult, they mate and seek out a hunting-ground and set up housekeeping on their own account.

Returning home late one moonlight night in Natal, I surprised a pair of otters, and three half-grown cubs, in a clay pit containing muddy water. They were busily engaged hunting frogs (*Rana*), and the tongueless species (*Xenopus lævis*). On observing me, they clambered up the rather steep sides of the pit and made off through the grass to an adjacent spruit, a distance of over a hundred yards.

In spite of the feet being nearly destitute of webs, the Cape Otter is an excellent swimmer. It glides silently through the water with the upper part of the head visible ; occasionally the ridge of the back



The Cape or Clawless Otter, which is slowly changing from an aquatic to a terrestrial animal.

THE CAPE OR CLAWLESS OTTER

and tail are seen, and on these occasions it has been mistaken for a large snake. However, as a general rule, the nose and head only are visible above water. On the slightest cause for alarm it sinks without a sound, emerging at some distance for a moment to breathe, and again sinks from sight. If the banks of the stream are covered with reeds or rushes, the otter, when alarmed in midstream, disappears, and makes straight for the bank, where it emerges and lies concealed from view.

It was quite a common sight to see a family party of otters swimming about in midstream on moonlight nights in the rivers in Natal. It is necessary to secrete oneself and remain perfectly still, for should a twig crack, or the slightest movement be made, the otters instantly sink, and are not seen again that night.

In Natal Clawless Otters are common, not only along the banks of the larger rivers, but even the small spruits. A family of otters lived amongst the reeds and rushes in the Dorp Spruit at the lower end of an estate of mine at Pietermaritzburg. Most of the tenants, who were natives, kept fowls. Almost nightly one or more fowls were carried off. The tenants occasionally caught glimpses of an animal vanishing in the darkness, and thought it to be a dog. One moonlight night the fowls of a tenant set up a great din, and the owner, rushing out of his house, saw two animals disappear in the darkness. It had been raining during the night,

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and in the morning the spoor of a pair of otters was plainly seen. We tried poisoned bait and traps without success. Then, as a last resource, steel spring traps were set and carefully covered with soil, at the favourite landing-places of the otters ; but their sense of smell being so highly developed they carefully avoided the buried traps, although their spoor was to be seen all around. To get the fowls, these otters were obliged to travel distances varying from a hundred to three hundred yards from the spruit, over cultivated ground. Occasionally a partially-devoured fowl was found amongst the reeds or rushes. Some otter-hounds were obtained and both banks of the spruit carefully searched. Eventually we located and killed a family of otters in some dense brushwood and scrub about a mile down the spruit. We presumed this family of otters were the robbers, for my tenants were not troubled again for over two years, when another pair of otters took possession of this portion of the spruit as a hunting-ground, and they, like their predecessors, soon began to give trouble.

Otters are sometimes hunted for sport on the larger rivers, with otter hounds and terriers, with varying success. It is difficult to dislodge an otter from the cover of the reeds, rushes, or brushwood along the river banks.

Finding the cover of the banks is no longer safe, and driven to bay, the otter swims out to the centre



Skull of the Clawless Otter, showing its powerful teeth. (Natural size.)

THE CAPE OR CLAWLESS OTTER

of the river, awaits the attacks of the dog, and fights desperately, until killed.

A friend lost two fox terriers, which were killed by a male Cape Otter in the Umgeni River in Natal. A pack of a dozen otter hounds and terriers had driven the otter from cover into the centre of a deep pool. Two terriers in advance of the pack, swam out and attacked the animal. The otter awaited their assault and gripped the foremost of the dogs. Both vanished under water and reappeared in a few seconds, struggling desperately. The second terrier came to the rescue, and for the next few minutes a terrific struggle was maintained. Presently the otter and one terrier disappeared, and the other was seen to be in difficulties. Diving himself of his coat and boots, my friend swam to the rescue, and succeeded in bringing the dog to shore. It was dreadfully bitten, and its abdomen was so severely lacerated that it subsequently died. No sign of the otter or second terrier was seen until the following day, when the bodies, with teeth firmly buried in each other's flesh, were discovered at a drift a quarter of a mile further down the river.

The Cape Otter when brought to bay always fights desperately to the last. On land it cannot put up much of a fight, for it is clumsy in its movements, and can, in consequence, be attacked from behind by an active dog before it can succeed in turning.

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When captured young and kindly treated, the Cape Otter soon becomes quite tame, and will follow its master about, trotting at his heels after the manner of a dog. We captured a young otter once in Natal, and kept it alive in a pond in a wire-netting enclosure. It was perfectly tame, and made great friends with the dogs, and loved to romp and play with them. It was exceedingly playful—in fact as much so as a kitten.

It preferred flesh food to any other kind of diet. Crabs were chewed up and swallowed entire.

In the wild condition the Cape Otter is carnivorous. Its diet is varied, consisting of fish, which it hunts in the water, usually in pairs or family parties consisting of the parents and cubs. Possessing no webs to its toes, it is, in consequence, not so swift and agile in the water as its web-footed relatives; therefore the fish which usually fall victims to it are the slow-swimming eels and catfish. The rivers and spruits in many parts of South Africa dry up during times of drought, and only isolated pools remain. In these the fish are pent up, and fall a comparatively easy prey to the otter.

Fish, however, as a general rule are difficult to catch, and moreover are not too plentiful in South African rivers, so a fish diet is largely supplemented or quite superseded by fresh-water crabs, river mussels, water tortoises, monitor lizards, frogs, and other kinds of aquatic creatures. Water birds often

THE CAPE OR CLAWLESS OTTER

fall victims to the otter, particularly wild ducks, which are often seized from beneath by the feet when swimming in the mud-discoloured water. The eggs and young of water birds are also eaten when found amongst the reeds and rushes.

A satisfactory supply of food in and near the water not being forthcoming, the Cape Otter forages the neighbourhood for considerable distances in search of the eggs and young of ground birds, land tortoises, lizards, and insects. At the Botanical Gardens at Pietermaritzburg, several swans were attacked and killed by otters, which, no doubt, had been driven to desperation by hunger.

Frogs and fresh-water crabs constitute the mainstay of the diet of the otter. The excreta of the Cape Otter is usually a mass of fragments of the chewed-up armour of fresh-water crabs (*Thelphusia perlata*), indicating that crabs, shell and all, are eaten.

Owing to a changed environment, persecution by enemies, or failure of the ordinary food supply, various animals are forced to gradually change their habits, and in consequence, their bodies become modified to suit their new surroundings. How this change is induced we know not. It is certainly quite independent of the intelligence of the animal. When we refer to this controlling, moulding, directing power which permeates everything we, for lack of a more convenient term, call it Nature. It is evidently a law of Nature that what is not used must be taken away, modified, or

otherwise changed. We have an interesting instance in the Cape or Clawless Otter, which has lost the claws of its fore feet; and even on the hind feet the claws are missing on the outer toes, and only vestiges remain on the other ones. Pits mark the spots where the claws once grew. In addition, this otter has no webs between its toes—only vestiges remain of what was once, no doubt, a fully webbed foot.

The disappearance of the claws and webs, and the heavy, clumsy, broad-headed appearance of this animal, leave little or no doubt that it is slowly but surely abandoning an aquatic existence, and becoming a terrestrial animal. Indeed, its habits are already as much those of a land as an aquatic creature.

In localities which afford an abundance of cover, this otter is often found half a mile or more from water. I have never, however, met with it very far from water except in situations where it could beat a retreat to the river bank under cover of long grass or scrub. In the drier parts of South Africa, where the rainfall is scanty, the farmers accumulate water in great dams. Although there is, as a rule, little or no food for them in these dams, yet these animals may frequently be seen disporting themselves in the water on moonlight nights. In these instances they have taken terrestrial habits, and merely visit the water for a frolic and a drink.

In India and neighbouring countries and islands, another species of clawless otter occurs, but it is

THE SPOTTED-NECKED OTTER

small in comparison with the Cape Clawless Otter, which, with the exception of the Brazilian Otter, is the largest of its tribe. A fully-developed male Cape Otter averages three feet in length from nose to root of tail. The form is thickset ; head broad, and jaws armed with strong teeth. The prevailing colour is rich chocolate brown, shading to lighter on the under parts. The fur is short, smooth, and glossy ; nose, upper lip, whiskers, cheeks, and throat are white.

THE SPOTTED-NECKED OTTER

OR

WEB-FOOTED OTTER

(*Lutra maculicollis*)

THE Spotted-necked Otter inhabits the rivers of the eastern portion of the Cape Province, and extends through Natal to the Transvaal and Rhodesia, and thence north through Africa from the West to the East Coast as far as Abyssinia.

Several specimens have been obtained recently from the Zwartkops and Sundays Rivers, in the District of Uitenhage, in the Cape Province. A pair were secured near Bellevue in July 1913, and are now in the Port Elizabeth Museum.

This species of otter has its toes fully armed with strong claws, and all the toes of both fore and hind feet are webbed to the tips. In conse-

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quence of its webbed feet and comparatively slender body, this otter is specially adapted for an aquatic life. It can swim and dive with the greatest of ease and grace, and is exceedingly swift and agile in the water, turning and doubling in an amazing manner when in pursuit of fish, which are hunted down in couples, or parties composed of the parents and immature young. Two to three seem to be the average number of cubs at a birth. One, which my taxidermist dissected, contained two embryos.

The Spotted-necked Otter is usually found along the banks of the permanently flowing rivers, and in ponds which do not dry up during times of drought. It is nocturnal by habit, but, like its clawless and webless cousin, it ventures forth in secluded localities early in the afternoons and on cloudy days. Occasionally in Natal I have seen pairs of them basking in the sun on the river bank during the winter months. The instant they were observed they tumbled headlong into the water and vanished, probably to reappear under cover of the rushes and reeds on the opposite bank. The diet of this otter consists largely of fish; but fresh-water crabs form no inconsiderable proportion of its food. Like the other species, it preys on a variety of creatures, including the Monitor Lizard, frogs, water-tortoises, aquatic birds, their young, and eggs.

I have never seen these otters except in the immediate neighbourhood of water, into which they



Two Spotted-necked Otters (*Lutra maculicollis*). One has a fish in its mouth, and the other is in the act of chasing it to secure a portion of the catch.

THE SPOTTED-NECKED OTTER

plunged when disturbed in their lair, which was invariably in the rushes, reeds, brushwood, or thick scrub on the banks.

Sometimes I discovered their lair under a ledge of rock overhanging a stream, or in a hole amongst the scrub-covered boulders on the steeply sloping river banks. Usually when a rock crevice or ledge is selected as a lair, the situation is immediately over a deep pool, into which the otters can drop on the slightest suspicion of danger.

The enemies of the otter are the larger carnivorous animals and pythons.

The Spotted-necked Otter is so called because of a few light red, yellow, or white spots on the throat and chest. In several specimens which I have examined from Sundays River no spots of any kind were present, nor were the upper or lower lips white; therefore these are either a sub-species or else the spots on the Spotted-necked Otter are not constant. Two such types are in the Port Elizabeth Museum.

This otter can easily be distinguished from the Cape or clawless kind by reason of its comparatively slender build and smaller size, apart from its fully webbed feet and claws.

In colour it is dark brown, approaching black on the back, merging into lighter brown on the under parts. The fur is short, thick, and glossy. A full-grown male averages two feet in length from the nose to the root of the tail.

THE HONEY RATEL

(*Mellivora ratel*)

Indundundwana or Insele of Swazis and Zulus (*Kirby*);
Icelesi of Amaxosa (*Stanford*); Sisele of Basutos
(*Kirby*)

THE Ratel (*Mellivora ratel*) inhabits Africa from the Cape to the French Congo on the west, and Nubia on the east. A black ratel has been discovered in the Congo forest, and has been named *Mellivora cottoni*. A third species is known as the Indian Ratel (*Mellivora indica*), which inhabits India from the Himalaya to Cape Comorin, but does not occur eastwards of the Bay of Bengal, or in Ceylon.

In South Africa the Honey Ratel, as it is generally termed, exists in all the provinces. Its haunts are the bush-covered lands, and especially those parts which abound in rugged, bush-clad hills and rocky kloofs. It makes its lair in a cave, crevice, in a hole amongst the roots of a tree, among the dead leaves under a clump of dense, thorny, creeper-clad shrubs, in the hollow interior of an old forest tree, or in burrows excavated by itself or those of other animals, such as the Aard Vark. Entrance to

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the interior of a hollow tree is sometimes attained by burrowing a hole amongst the roots and scraping out the rotten pith. Another plan is to actually ascend the tree and enter it from the top of the trunk, where in some species of old native trees a hole is usually found.

It is stated that the ratel does not climb trees. True, it cannot ascend a tree with a smooth trunk if there are no branches or twigs within reach ; but should the trunk be rough and uneven on the outside, the ratel obtains a grip with its claws and slowly and carefully ascends. If there are twigs or branches within reach the animal finds no difficulty in ascending trees. Reaching up, a twig or branch is hooked with the large, curved, horny claws of the front foot. The body is then drawn up with the assistance of the back feet gripping the trunk, and the other fore paw is hooked over the branch. Then, standing on its hind legs, it once again reaches up to the nearest twig or branch above it, and so on. Wherever there is a foothold the ratel will climb, even up the rough face of a precipice. It is quite indifferent to a fall which would seriously injure or kill most other kinds of animals : this is owing to its loose, thick, and tough hide. A ratel which I have in captivity tumbled from the balcony of a public building to the asphalt floor below, a distance of forty feet. It fell with a thud on its back, but was up again in an instant, none the worse. I noticed when it lost its

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foothold on the balcony it coiled itself up into a ball, with the head and legs tucked under its body. Bunched up like this, the legs, nose, and jaws were safe from injury, even if it fell upon jagged rocks.

The ratel is carnivorous, and nothing of an edible nature comes amiss to it. If hard pressed for food it devours roots, bulbs, and various other vegetable substances. Wild berries and fruits it is rather fond of. However, flesh food in some form is its mainstay, supplemented by the honey and larvæ of wild bees. In fact its chief mission in life is to act as a check on the too rapid increase of the native honey bee. Its thick skin is quite impervious to the sting of a bee, and the claws of its fore paws are specially adapted for tearing away the rotten wood of old trees, in the hollow interiors of which the honey bees establish homes, store up honey, and rear their broods.

There are few situations in which hives of bees are safe from the ratel. It will even ascend the face of a cliff should there be sufficient foothold, and scoop out the comb from the rock crevices. When a bee's nest is found, the ratel is by no means content to satisfy its hunger by eating the honey and the comb containing the bee larvæ, which are white grubs in the cells of the comb. What it cannot eat on the spot it carries off to its lair to furnish a meal. This habit is not confined to honeycomb. It applies to any other kind of provender, as I am aware from personal observation.



The Honey Ratel is a bold and fearless fellow; trusting for protection to his thick and tough hide, he attacks and devours venomous snakes.

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The ratel, like its relatives the weasels, does not chase down its living prey by speed. It progresses at a rapid swinging trot, but can easily be overtaken by an average dog. I have on several occasions seen them run down on the veld by natives. In broken country, however, they are impossible to follow. Coming upon a hare or small antelope, the ratel starts off on its trail, with nose within an inch or two of the ground, and tail elevated, but never endeavours to run down the intended prey by speed. It is untiring. Of all animals known to me the ratel has the most energy, endurance, and perseverance. Once upon the track of an animal there is little hope of ultimate escape for the creature, for, however far it may travel, the ratel will follow. Nothing in the way of a difficulty seems to discourage it. No animal which it is able to overpower is safe from it. The Springhare, Meerkat, Rat, Ground Squirrel, and other burrowing creatures attempt to find sanctuary in their underground retreats, but the ratel is in no way disconcerted. It instantly sets itself the task of digging them out. Its strength and endurance are so phenomenal that it rarely fails to reach the terrified occupant of the burrow. However many animals there may be in a burrow, it spares none. It takes the keenest delight in killing. Even the formidable porcupine, covered with his armament of sharp quills, falls a victim to the ratel, for its hide is so tough, and it attacks the animal so skilfully, that

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the sharp quills do it little or no damage. It takes the greatest care not to expose its under parts, where the skin is tender and thin.

I watched two male ratels in deadly combat one evening just about dusk. It was apparent that each of them was exercising the utmost care to protect its tender abdomen from the teeth of the other. They advanced on one another with bent back and head lowered. Each seemed to be inviting the other to bite first. The motive was plain, as the one which bit first was at a disadvantage, for the instant it raised its head and seized the tough skin of the neck or back of its opponent the latter would instantly make a grab for its abdomen, which is soft and easy to bite through. The skin of a ratel is so loosely attached to its body that should a foe seize it by the back of the neck it can turn in its own skin so easily that it is enabled to lacerate its enemy's mouth and throat and inflict frightful injuries.

So tough is the skin of a ratel that the sharp teeth of a dog will not penetrate it. A large hound is no match for an adult ratel, although it is of such comparatively small size. When the hound bites it only succeeds in getting a mouthful of the ratel's hide, but does the animal little or no damage. Meanwhile the ratel is getting home a succession of severe bites, which eventually cripple or kill the dog.

Little short of actually shattering the thick skull,

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or stabbing or shooting it through the heart, will kill a ratel. They are as tenacious of life, or even more so, than the Stink Muishond or Polecat. Few, if any, of the denizens of the forest venture to attack a ratel.

A female ratel was attacked by Mr L. Walton's dogs on his farm at Mimosa, and while the fight was proceeding the ratel's mate came out of the bush at a swift trot and viciously attacked its mate's enemies, and, to save his dogs from being torn to pieces, Mr Walton was obliged to shoot it.

Although a nocturnal animal, the ratel is often seen abroad on cloudy days and just after sundown, but until after dark in the neighbourhood of man it does not venture far from its lair.

Although its eyes are small and deepset, they are keen and sharp and long-sighted. At night they are powerfully phosphorescent. On an occasion we located a ratel in a cave. The terriers were barking furiously, and the ratel was giving vent to a volley of harsh grating sounds very much like the noise made by filing iron with a large rough rasp. Creeping through the opening to the cave, which was hidden by a great mass of scrubby bush, I was startled to see two bright phosphorescent lights which glowed and flashed and died down, to again flash out with greater intensity. So terrific were the grating growls, and so uncanny did those two points of greenish light from out of the intense darkness appear, that I hastily withdrew.

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Away from the habitations of man the ratel is a useful animal in maintaining the balance of Nature. Armies of rats, mice, noxious insects, and venomous snakes fall a prey to it. However, in the vicinity of man the Honey Ratel is not to be trusted, for it often develops an undue fondness for poultry, ostrich chicks, kids, and lambs, as well as domestic hives of bees. It is only, as a rule, when driven to desperation by hunger that a ratel ventures near its most dreaded enemy—man. I was living for some time at the farm of a friend, and although a pair of ratels had been living in a neighbouring kloof for several years, they had never been guilty of interference with any of his stock. The country was a bushy one, and the ratels found an abundance of food without having to resort to the dangerous expedient of venturing out within the sphere of influence of the farmer's dogs and gun. We knew the lair of these ratels, which was in a hole under an overhanging boulder, amongst the tangled bush and creepers at the foot of a krantz, but my friend would not allow them to be molested, for the reason that they were useful agents in destroying rats, mice, snakes, locusts, and other pests. Time enough, said he, to kill them when they began to do him injury.

There is a little bird known as the Honey Guide in South Africa, which has obtained its name from its habit of guiding people to the hives of wild bees. Screaming, chattering, and fluttering its wings, it

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seeks to attract attention. When it observes it is being followed, it flies from branch to branch, chattering and fluttering its wings until the hive is reached. It is asserted by many that the ratel follows the Honey Guide bird, and in this way discovers bees' hives. Naturalists have not yet agreed to accept this statement as fact, but from my experience of the ratel in the wild condition and in captivity, I should certainly give it credit for possessing sufficient intelligence and cunning to follow one of these birds. After all, it does not involve any great degree of intelligence. The practical naturalist, who has lived out in the wilds amongst the denizens of veld, forest, and mountain, knows that the ways and habits of a large number of animals indicate as much intelligence and reasoning ability as most primitive races of men, and that many of their habits could, with advantage, be copied by what are termed the civilised races of men.

It would be comparatively easy for the ratel to learn to recognise the meaning of the Honey Guide's actions as clearly as did the pygmy Bushmen and the Hottentots of the past. The Honey Guide would no doubt be well aware of the ratel's love for honey, and its wasteful habit of scraping out the entire contents of the nest, and that in consequence there would be a sumptuous feast of bee grubs for it when the ratel had retired. Knowing this, it would make every effort to get the ratel to follow it to a hive. Seeing a bird apparently crippled,

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and fluttering almost within reach, the ratel would be induced to follow it up in the hope of securing the bird, and would thus unconsciously be led to a hive of bees. The ratel is one of the most inquisitive of animals, and curiosity alone would prompt it to follow up a chattering, fluttering Honey Guide bird. Once having followed one of these birds and having found a beehive, the ratel would not be slow in connecting the two; the next time a bird demonstrated before it the ratel would follow it with the greatest of eagerness. The habit would be learned by the ratel's progeny, and from generation to generation the instinct to follow the Honey Guide would deepen.

Major J. Stevenson-Hamilton, in his interesting book, *Animal Life in Africa*, gives the following, and apparently convincing account of the ratel being led to beehives by Honey Guide birds:—

“You may be resting in the bush in the cool of the afternoon, or on some cloudy day, when your attention is arrested by the persistent and approaching chatter of one of these feathered spies. Presently the bird itself comes fluttering on to a branch some thirty yards distant, where it perches, flapping its wings, and displaying every sign of impatience. For a moment it is silent, and then a less familiar sound strikes the ear: a light sibilant hissing and chuckling, which at first you find yourself unable to identify: ‘Kru-tshee, krut-shee-clk, clk, clk, whee-tshee-tse, tse-whi-o-o’ (it is almost impossible

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to do it justice on paper). The Honey Guide understands, and having, with undulating flight, sought another tree some thirty yards further on, renews his invitation. Keeping quite still, and looking steadily, you presently spy a little grey and black form, moving along at a steady jog-trot; the tail is carried slightly above the level of the back, and the head, except when raised to glance up at the guide, is held a little low. Every time the bird utters his monotonous refrain, which, translated into feathered language, means, 'Come along, come along, don't be slow,' the follower replies, 'All right, my friend, don't be alarmed, I am coming.' And thus the strange procession passes on out of sight to the hollow log where the unlucky insects are industriously slaving, only ultimately to satisfy the appetites of bird and beast. When following the Honey Guide, the natives of many tribes in Africa endeavour to imitate the curious whistling and chuckling sounds of the ratel; though indeed the bird appears to require but little encouragement to keep it to its work."

When a ratel is pursued it takes refuge in a rock crevice, a hole, or in the midst of some dense thorny scrub. In these situations it is exceedingly difficult and often impossible to dislodge, even with the aid of several good dogs, for its strength is great and its skin impervious to the bites of the dogs; and moreover it is no mean foe, for when brought to bay it fights to the death. It bites in a most

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savage and tenacious manner and with great power, for the muscles of its jaws and neck are large and strong. Though such a formidable opponent to tackle, when once captured and treated kindly it becomes surprisingly tame, docile, and affectionate. When taken into captivity very young, or when about half grown, ratels become as tame as domestic dogs, and make the most amusing of pets. If the cage be large and roomy the ratel plays all sorts of antics. Trotting to one end of the cage it quickly turns and, taking a short, swift run, thrusts its head between its forepaws, arches its back, and bowls along like a football. One which I have in captivity is as tame as any domestic dog. On an occasion I gave it its liberty in a small hall. My friend had a fox terrier, which instantly began barking at the ratel. The latter, without the slightest warning, made a short rapid rush at the dog, closing itself up like a hedgehog and trundling like a big hairy ball over the floor. The terrier skipped out of the way, and when the impetus with which the ratel had launched itself was expended, it raised its head and glanced around. Instantly it was up and at the terrier again. Its energy was astonishing. Round and round the room it chased the dog, and every time it came within a few yards of it the ratel rolled itself at the dog. Evidently it thought the performance excellent fun, for all the time it gave voice to a low, peculiar sound, which I learned to know was an

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expression of pleasure. The dog was not much alarmed, and was inclined to take the whole affair in a sporting spirit. Tiring of dodging about, the dog stood still, and once again bowling itself at it the ratel collided with the dog rather violently, whereupon the terrier seized the ratel's hide and worried it fiercely, but the animal took it all in good part, and, drawing back a few paces, again trundled itself against the dog. By this time the terrier had lost his temper and assaulted the ratel in real earnest, but the ratel didn't seem to mind. She took care, however, only to allow the dog to worry away at the tough skin of her back, and seemed to enjoy the process. Thinking the dog might bite on some tender part and enrage her, we carried her off to her cage.

This ratel goes by the name of Jeannie, and for the past four years has been confined in a cage at Port Elizabeth Museum. It is a great favourite with practically all the children of the town, as well as most of the adults.

Everyone in or near Port Elizabeth knows Jeannie the ratel. She is subjected to rather rough treatment at times by visitors, but she takes it all in good part, for it seems impossible to hurt her, so thick and tough is her skin. You may pull her about by the tail, pinch her, prod her with a stick, play football or almost anything you please with her body; and instead of getting angry she imagines you are doing it all to please her, and in consequence

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is highly delighted. Often when unmercifully teased she will pretend to be angry, and growls in a harsh, grating way, loud and long, but she nevertheless continues to bite and worry in play. I placed a young ratel with her one day, and she, being unduly rough with it, an assistant brought a stout stick and belaboured her with vigour; but he might as well have beaten a door-mat. She didn't mind it in the least, and rather enjoyed the thumping. It was only when he happened to tap her on the nose that she lost her temper and growled like the sound of half a dozen men filing iron; and her eyes flashed like green fire in the gloom. However, ten minutes later she was lying on her back and crooning with delight, while the same man tickled her ribs with his fingers.

Her claws were growing rather long, and she had taken advantage of the fact, and had started to tunnel a hole through the brick wall at the back of her cage, so we decided to clip her nails. She thought it fine fun when we tied her up in a mealie sack, but when we cut sundry holes in the bag and began pulling her legs through, she evidently thought we were up to something and grew suspicious; so fiercely did she struggle and so strong was she that it took three grown men three-quarters of an hour to cut her toe-nails. She bent her fore paws and a strong man failed to straighten out the limbs, although he had the advantage of gripping her by the paw with a gloved hand. The Honey



Jeannie, the live Ratel at the Port Elizabeth Museum. She strongly resented being photographed. Jeannie was known and loved by every boy and girl in the city.



An albino Honey Ratel from Hankey, Cape Province. This ratel was pure white and exceptionally large and strong.

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Ratel and its cousin the badger are probably two of the strongest and toughest animals upon earth for their size.

No ordinary cage would hold Jeannie the ratel. We had a cage specially made, but she demolished it. Another was erected which the maker guaranteed was ratel-proof. She broke out of it a score of times until it was covered with unsightly patches. Just about that time we were temporarily exhibiting a series of live animals with explanatory labels in special cages in the museum ; these were renewed from time to time by others kindly loaned by a dealer in animals. We thought that at last we had Jeannie securely confined. For over a month she had failed to make any impression on the cage. However one night she broke out, and next morning I met the caretaker at the door with a woebegone expression on his face. " Why, what's the matter, Brown ? Is your mother dead or what ? " " Jeannie got out last night, sir ; come and see." There lay the ratel in her cage, and when she saw me she sprawled on her back and crooned affectionately. She seemed particularly pleased with herself that morning. Glancing down the hall, I saw a heap of broken glass. It was the front of a cage in which we had a number of tame Fruit Bats. She had deliberately thrown her body through the glass, captured and ate the bats, the odd scraps of whose bodies bore witness to the fact. The next cage was a smaller one, and contained dormice in different compart-

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ments. This cage she also demolished, and had eaten its inhabitants. Half a dozen other cages had also been smashed and the creatures therein had gone the way of the others. Four baby Chacma Baboons were sitting in the remotest corner of their roomy cage hugging each other and chattering with fear. No wonder, for they had a lucky escape from a terrible fate. The ratel had, during the night, tried every part of the cage. There were traces of her operations on it on all sides. She had even climbed up to the top, a height of ten feet, and had upset some art bowls containing choice growing palms. These were in fragments on the floor. Her mind had evidently been diverted by the sight of nine albino rats in an adjacent cage. This cage was four feet square, with strong glass sides and a series of augur holes round the wooden frame near the bottom; and the top was covered with strong wire.

Failing to break the glass or to otherwise demolish the cage, the ratel patiently scraped at one of the augur holes until she had enlarged it sufficiently for a rat to get through. The wood was thick and hard, and it must have cost her hours of patient labour. Then, making formidable demonstrations on the opposite side of the cage, she frightened the rats so thoroughly that they endeavoured to escape through the hole she had made. This was exactly what she was intending that they should do. When one of the rats emerged she evidently pounced upon

THE HONEY RATEL

it, and killing it laid its body aside and again began the same tactics of frightening them. One by one as they emerged she slew them, until the nine were dead. There is no doubt whatever that the ratel actually did employ the method stated of intimidating the rats with the one fixed object of getting them to crawl through the hole she had made, for the glass, the woodwork, and the floor bore ample evidence of her having hammered, bit, poked, and battered the case on the side opposite to the hole she had made.

After eating one of the fattest of the albino rats, and her appetite being appeased, she began scouting round to find a safe retreat. Eventually she found in another hall of the museum a hole communicating with a dark hollow recess under two flat-topped cases which had been placed back to back, the sides of which were boxed in with wood. Exploring the dark interior she found it to be an ideal lair, so she forthwith trotted back to the scene of her destructive energy and carried the rats a distance of a hundred yards, one or two at a time, and deposited them in her lair.

Here the caretaker found her with eight dead rats by her side. When the cases were removed and she realised that concealment was no longer possible, she scooped the rats into a heap with a sweep of her fore paw, and, lying flat upon them, defied him to take them from her. Finding he was able with a long stick to poke some of them from under her

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body, she rolled into a ball with the rats held tight under her arms and between her legs, and her chin clapped down tight on top. So fiercely did she growl that he was rather afraid to tackle her. Eventually she was scooped up into a net, rats and all, and deposited in her cage.

Fearing another midnight raid, a cage of iron bars, strong enough to resist the efforts of a grizzly bear, was erected. In this for the past year she has rolled, tumbled, and paraded; often for three or four hours she continually runs up and down her cage at a rather fast swinging trot. At the back of her cage is a window, and outside of it is a ledge nine inches broad running along the wall a distance of fifty feet. The window was at that time covered with strong netting, and breaking through this and squeezing under the slightly open window she paraded for a couple of hours up and down the ledge, which is at a height of about sixty feet from the street below. Crowds gathered below and stared, expecting every moment to see her come toppling down. Tiring of her monotonous parade, she squeezed in again under the window into her cage and lay down and slept.

When Jeannie first arrived at the museum she was rather timid and nervous, and at intervals, when very frightened, excreted a fluid from certain anal glands which had a vile musky smell, very similar to that of the muishond or polecat, but not quite so powerful or pungent. This evil-smelling

THE HONEY RATEL

perfume serves the purpose of a protection against enemies. For instance, should a ratel be attacked and hard pressed it discharges a quantity of this evil-smelling fluid, which nauseates its foe. If a leopard, cheetah, or lion should pounce upon a ratel, thinking to make a meal of it, all the ratel need do is to excrete a little of its special perfume, stored up for such occasions, and its enemy drops it in disgust.

However, like the Striped Muishond, the ratel in captivity when kindly treated never ejects this fluid, and the animal in consequence is odourless.

In front of Jeannie's cage is a donation-box bearing an inscription as follows: "It costs sixpence a day to feed me, and I am told if I am not self-supporting I will not be allowed to live. Please give me a penny, sir." She seems to have some idea what this box is for. When a visitor approaches her cage she croons and makes a variety of coaxing noises which might be termed ratel language. Then stretching out a fore paw she claws the slit in the box, indicating as plainly as possible that she expects the visitor to drop a coin into the box. She has not been trained to do this. Observing visitors drop coins through this slit in the box, and the jingling sound of the money evidently being pleasant to her sense of hearing, she now tries to attract attention to the box. The contents of this box are collected once a week, and during

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the process Jeannie expresses her satisfaction in a multitude of sounds. The average total per week is six shillings, and as we have had the ratel for a period of four years this means we have acquired the sum of about £60. With this money we have been enabled not only to feed Jeannie but all the other live creatures in the museum, and even to have a small balance with which to buy sundry live snakes, &c. Therefore Jeannie is not only self-supporting, but actually finds the coin for the purchase of food for a variety of animals.

The ratel in captivity at first is inclined to sleep during the daytime, but after a month or two it changes its habits and becomes lively and energetic throughout the day. In captivity ratels will thrive on fresh meat supplemented by fruit, rats, mice, and some honeycomb occasionally. Fresh meat and bananas is the chief food of the two which I have. On a diet of meat only they are apt to have seizures similar to epileptic fits. Our old friend Jeannie got fits nearly every day for a week, and on inquiry I found that the caretaker had been feeding her exclusively on raw meat. When fruit was added to this diet she completely recovered.

Several ratels placed in the same cage together agree all right. At first the new arrival is somewhat teased, and is apt to resent it in a surly way, but soon becomes friendly, and enters with the greatest of zest into all the games and gambols, for ratels are as playful as monkeys—in fact far

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more so, for they will play without resting the entire day.

Unlike the monkey, the ratel is not a treacherous pet. Once tamed it can be depended upon. Of the many hundreds of animal and bird pets I have had, the ratel has proved the most amusing and lovable. Coming home dispirited, weary, and disheartened, the warm welcome given me by my pet ratel, combined with its good-natured, cheerful ways, removed much of the gloom from my mind.

A farmer friend had a most unenviable experience with a ratel. I was staying with him for a few days and was much interested in his collection of bee-hives, which were all in up-to-date boxes. Awakening one morning and sallying forth I was astonished to find the air full of bees. They soon made their presence manifest to me, and I retreated hastily indoors, smarting from a multitude of stings. Utilising a mosquito bed-net, my friend and I enveloped ourselves and went forth to find that one or more of the rascally ratels had visited the hives during the night and overturned about a dozen of them.

These we fixed up, and eventually the infuriated bees became pacified, but not before much mischief had been done, for they had fiercely assaulted all the stock in the vicinity. A score or more of chickens had been stung to death. One ostrich, to escape the bees, had dashed into a fence and broken its neck, and another had snapped its leg in

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a similar manner. The herd of cows had broken out of the kraal and were careering over the veld, and all the Hottentot farm hands had fled.

My friend, realising that unless the ratels were destroyed he would have no peace, since having tasted of his honey they would be sure to turn up again, determined to hunt them down.

Getting together a number of natives and dogs, we systematically searched a neighbouring kloof, and late in the afternoon located a pair of ratels in a hole excavated between two large rocks and under another which was overhanging. After considerable trouble the natives dug the ratels out and speared them with their assegais.

THE STRIPED MUISHOND OR STINK CAT OF SOUTH AFRICA

(*Ictonyx capensis*)

Syn. : *Zorilla striata*

Iqaqa of the Amaxosa (*Cloete*)

THE Striped Muishond, otherwise known as the Stink Cat and Polecat, is found in all parts of South Africa, and occurs as far north as Central Africa. Although the only species found south of the Zambesi and Cunene Rivers, there are four other kinds in Central and Northern Africa, viz. the Senegal Zorille (*Ictonyx senegalensis*), Suakin Zorille (*Ictonyx erythreæ*), Libyan Zorille (*Ictonyx libyca*), and Brindled Zorille (*Ictonyx frenata*). The Striped Muishond, although common, is seldom seen by the casual observer, for the reason that it sleeps in the recesses of its burrow by day and hunts by night.

This muishond and its near relative, the Snake Muishond, take the place in South Africa of the weasel of Europe and the skunks of America.

The Striped Muishond is provided with powerful claws on its front feet. With these it tunnels

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into the soil in search of insect food, and burrows down to the innermost hiding-places of rats and mice, devouring both the adults and young. Nothing of a fleshy nature comes amiss to the muishond, and it is by no means particular whether its diet be carrion or living prey. Like all of its tribe, it is bold and bloodthirsty. If surprised it invariably faces the aggressor and even boldly advances to the attack, emitting a rapid succession of shrill and discordant yells.

A friend, who was a recent arrival from Ireland, was staying with me in Natal. One evening on his way home he was dreamily walking along a Kafir path through the estate when a muishond happened to be wending its way along the same path in the opposite direction. The two met, and the muishond sprang at him.

The flashing phosphorescent eyes, and the sharp, rapidly-repeated screams of the creature terrified my friend so thoroughly that he instantly raced off like a hare, imagining some formidable beast was about to devour him. I have often seen men in an extremity of terror, but not more so than that "tenderfoot" from oversea. However, the sudden appearance of two luminous eyes and a rapid succession of shrill yells of as fine a pitch as the highest violin note, from out of the darkness in a strange and lonely bush-covered place, where weird shadows prevailed, was enough to shake the nerve of even a seasoned naturalist.



A Striped Muishond or Stink Cat with its family of three, at the entrance to its burrow. The muishond is black, with yellowish stripes, which become almost white on the neck and head. The stripes on the young at birth are pure white. An adult muishond is from twelve to fourteen inches in length from the tip of the nose to the root of the tail.

THE STRIPED MUISHOND OR STINK CAT

The mission in life of the muishond is a good and useful one. Like all the weasel tribe, it is a most bloodthirsty creature. Nothing comes amiss to it. Insects are sought out among the herbage and devoured, or if the soil abounds in their larvæ it digs down after them. The large white grubs found in manure heaps, which are the larvæ of the Rhinoceros Beetle, are an especial dainty, and, in consequence, if heaps of manure are in the vicinity of its lair, the muishond visits them nightly, and at these times may easily be captured with the aid of dogs.

The powers of scent possessed by the muishond are superior to those of the bloodhound. Once upon the track there is little chance of ultimate escape for the hunted creature.

The muishond is a slow runner, and when it startles a hare the latter is off at a bound. The pursuer is in no hurry. It does not even trouble to raise its head to see which direction the hare has taken, but, with tail bent over its back and nose to the ground, it starts off on the trail at a slow trot. Time and again the hare is startled by the sudden apparition of its dreaded enemy, until eventually the creature gets so terrified that it becomes dazed ; and when the muishond again appears it either hops around aimlessly or else throws itself upon its side and screams shrilly. The implacable hunter instantly seizes it by the throat, and the sharp canine teeth soon cut through the jugular vein. The

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blood is then eagerly lapped up, and a portion of the tenderest of the flesh is eaten. The rest is abandoned, and, as a rule, the hunter does not return to it, knowing probably it would be of little use to do so, for the many other carnivorous denizens of the bush-veld soon smell it out and devour it.

Some years ago I fenced in some acres on an estate in Natal, and let loose two score of rabbits. At first they bred rapidly, but the muishonds found them out and, climbing over and digging under the wire netting at night, they soon destroyed them all. One of these rabbits was very tame, and on the least alarm bolted off to my residence and sought refuge under my bed. One bright moonlight evening I was sitting on the stoep and observed a dark form bounding down the avenue. It turned out to be my tame rabbit, which in its terror did not notice me, but vanished indoors. Presently I saw in the moonlight a dark form, with nose to the ground and tail elevated, following the trail of the rabbit at a slow trot, and so intent was it on its pursuit of its intended victim that it did not observe me, and was about to pass through the open doorway when I sprang up. With a succession of fierce yells it instantly faced me. I as rapidly retired out of range of its peculiar but effective mode of defence, which is one of the most evil-smelling substances imaginable. It is a fluid, yellow in colour, secreted by certain anal

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glands, and when the muishond is attacked it turns its back to the foe and discharges several jets of this pungent scent, which is so nauseating that few animals can tolerate it, and instantly flee. Occasionally a dog is bold enough to rush in and attack a muishond notwithstanding the dreadful smell. The fluid is stored up in these anal glands and can be discharged at will.

Fear is often expressed lest rabbits might become a scourge in South Africa, as they have done in Australia. This cannot possibly happen so long as the muishond, mungoose, wild cat, and Eagle-owl inhabit the country. The striped muishond alone is capable of keeping their numbers in check. However, because muishonds sometimes cause destruction among poultry, and eat the smaller species of game birds and animals, the hand of practically every colonist is against them. In self-defence, muishonds in the vicinity of the dwelling of the poultry breeder must be destroyed, but it is a foolish policy to shoot and otherwise do them to death away out in the wilds where they are fulfilling their mission of maintaining the balance of Nature. Plagues of destructive insects, animals, and infectious disease have, in the past, ravaged various countries through sportsmen indiscriminately destroying the native carnivorous animals and birds of prey, because they kill and devour a percentage of the creatures which he desires to slay and eat himself.

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The muishond frequently burrows into sod fences and makes its lair therein. One day I set a Kafir to dig one out. He came upon it rather suddenly, and before we were aware of the fact I had received a stream of scent upon my coat, vest, and trousers. The odour was so horrible and nauseating that I felt symptoms similar to the worst form of sea sickness. I bolted off at full speed for home, a distance of about a quarter of a mile, discarding my garments as I ran.

I subsequently asked my native groom if he would like to have the suit, which was a new one. He accepted it jubilantly, with many an ejaculation of delight. I told him the smell wouldn't come off, but he only smiled a smile of incredulity, and remarked that he would soon wash it out. The clothing was steeped in warm soapy water overnight, and was thoroughly washed the following day. A few days later the native gloomily admitted I was right, and that he scrubbed the clothes till he was exhausted, but the smell remained.

A year later, when turning over lumber in an outhouse in quest of Night Adders (*Causus rhombeatus*) which had become rather troublesome, I came across that suit hanging from a peg, but it smelled as strongly as ever.

The muishond will boldly attack animals considerably larger than itself. Sometimes it steals upon a sleeping hare unawares, and should it succeed in obtaining a grip with its teeth, the hare is doomed,

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for, although it may bound off, the muishond stubbornly holds on, allowing its body to hang limp and bump over the ground as the hare races frantically away.

The instant the hare ceases running, a fresh grip is taken, which usually, within a few minutes, ends the life of the victim. Many a time I have, when returning home about dusk, seen muishonds in the act of devouring venomous snakes, and on other occasions have witnessed the snake being killed.

They will attack and kill the largest cobra. Sometimes in the fight they get bitten and die, for they are not immune to snake venom, as I have satisfactorily ascertained by a series of experiments. It, however, requires a large dose of venom to kill one.

On one occasion I introduced a Cape Cobra (*Naia flava*) into a spacious cage containing a muishond. The reptile instantly reared and remained on the defensive. With tail turned over its back, the muishond began circling round the snake, ever and anon making pretence to dart in at it. Each time it did this the cobra lunged fiercely forward, but the nimble little animal sprang aside, and the head of the snake struck the floor of the cage with a thud. However, so rapidly did it recover itself that the muishond did not get an opportunity of inflicting a bite. This went on for a full half hour, until the snake was beginning to show signs

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of fatigue. It did not now recover so quickly when it lunged forward. The muishond was not slow to notice this, for it boldly darted forward and nipped the snake's neck before it could withdraw and elevate its head. Twice it gripped the snake and sprang aside, but on the third occasion it seized the reptile by the head and held on tenaciously until the skull was crushed to fragments, and without pausing it deliberately chewed up the snake's head and swallowed it. It then dined off a portion of the body and, leaving the rest, trotted off into a corner of the cage and, coiling up, went off to sleep.

An interesting account of a fight between a cobra and a muishond is related in the *Zambesi Mission Record* for July 1912. It is as follows :

“ One moonlight evening last winter, Br. Arnold was walking down one of the paths on the plateau at Dunbrody, when he saw a most curious and interesting sight. On the path just in front of him a deadly battle was being waged between a polecat and a yellow cobra some four feet long. The little skunk, with its tail turned right over its back, was leaping nimbly from side to side, ever looking for an opportunity of biting the snake, and whenever the latter made a dart at it the polecat turned swiftly round and bombarded the cobra. Two of the Fathers were called to witness the combat, and for more than half an hour they remained there, spectators of a rare and most charming

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sight, especially delighted in the graceful movements of the little cat. The cobra was at length placed *hors de combat* by a bite upon its neck, and then the polecat dragged it out of the path and began to devour its head. One of the Fathers who had witnessed the fight, wishing to ascertain the length of the snake, seized its tail and drew it out straight. The polecat, instead of showing any signs of fear, kept fast hold of the head and growled angrily, just as a cat does if disturbed while devouring a mouse."

When attacking a cobra the muishond makes a few feints, and when the snake strikes, it rushes forward and seizes the reptile by the head or neck before it is able to recover and deliver a second thrust. When attacking sluggish snakes such as the Puff Adder, it usually approaches the reptile from behind, and with a sudden rush it is upon the snake, and instantly grips it by the neck, the vertebræ of which it crushes. The fur is thick, and the skin tough, and when bitten by a snake on the back, the fangs, as a rule, do not penetrate, or not sufficiently so to enable the reptile to inject a fatal dose of venom.

Of course if a muishond or a mongoose should happen to be slightly bitten several times by venomous snakes and recover, they would become more or less immune to snake venom, but none of these animals, so far as experimented upon, have shown any noticeable degree of immunity.

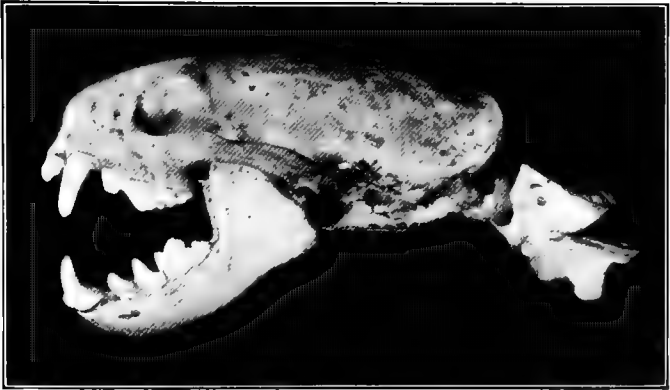
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Birds, their young, and eggs are a favourite diet of the muishond. However, it is only those species which live and breed upon the ground which are levied toll upon.

The chief diet of this bloodthirsty little animal consists of rats and mice. There are a large number of species or kinds of these destructive rodents native to South Africa, in addition to those which have been introduced into the country. Rats and mice, as everybody knows, breed with great rapidity, and if it were not for the smaller carnivorous animals and birds of prey of this country these destructive creatures would become a scourge and cause immense damage, and probably disseminate many virulent diseases among men and domestic animals.

The muishond hunts these rats and mice above ground and underground, and will spend hours patiently digging them out of their subterranean retreats.

Another rodent animal which is a curse to the agriculturalist is the Springhare or Springhaas (*Pedetes caffer*). This animal is about the size of an ordinary hare, and is kangaroo-like in shape. It lives in burrows excavated by itself, and the muishond is one of its most dreaded enemies, for it penetrates to the innermost recesses of its burrow and destroys both adults and young. The muishond in this way confers an immense service upon man, for the Springhare is an unmitigated pest



The life-size head of a Striped Muishond, showing its strong carnivorous teeth. Note the large canine teeth with which it penetrates the throats of its victims.



A pair of baby Striped Muishonds in a man's hand. Their eyes are not yet open. Three were taken from a burrow in a sod fence.

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for the reason that its food is of a strictly vegetarian nature, and it plays havoc with the crops and vegetable gardens.

The muishond, however, has incurred the hatred of the poultry breeder. One of these bloodthirsty little fellows gained access to my fowl-house one night and killed twenty-one fowls. In each case the neck bones near the base of the skull were crushed, or the throat torn out, or both. The dogs the following morning traced the murderer to an adjacent tree. It was lodged between two large branches ten feet from the ground. When dragged down and killed it was found to be greatly distended with the blood of its victims. This is the only instance I have known of a muishond climbing a tree.

The muishond is exceedingly tough and hard to kill. I have seen them worried by large dogs, and apparently they were little short of a pulpy mass, yet when cast aside they were found in an hour or two to have revived and had vanished into the bush. On an occasion one of them was surprised in the act of devouring a pigeon, and my native boy gave chase, and overtaking it battered the creature with a stout stick until it was apparently dead. Bringing the muishond home, he cast it upon the roof of an outhouse, and returning in an hour's time to skin it, he found it had vanished. He traced its spoor in the mud for some distance, but failed to recover it.

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The young are born and suckled by the mother in a cavity at the end of a burrow, usually in a bank or sod fence. Instead of a burrow, the muishond sometimes takes possession of a crevice in the rocks, in a hollow tree, or fallen log, the rotten pith of which it scrapes out. Sometimes it is found in the deserted holes of other animals.

The number of young ones at a birth is usually two or three. In captivity the muishond becomes very tame, and in a short while gets attached to whoever is in the habit of feeding it. For many years in Natal I kept muishonds in captivity, sometimes in cages, and at other times chained up. The animal, if chained, must be secured round the loins, as it is able to easily withdraw its head if a strap is fastened round its neck. In captivity the muishond is odourless, and will not eject its disgusting fluid unless purposely irritated or frightened, nor will it attempt to bite. It can often be tamed so effectually that it may be allowed to roam at large like a household cat, and will not wander away. It is at these times very useful in devouring rats, mice, and troublesome insects, and destroying any snakes which might venture near the homestead. Fowls and pigeons must, however, be kept out of its way. It is far more useful to a farmer than a cat when thoroughly domesticated, for the reason that it burrows into the stacks of forage, lucerne, and other produce after the rats and mice, which do so

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much damage to the stacked grain and other crops.

I happened to be camping about a score of years ago out in the wilds in Natal with half a dozen friends. It was a winter's night and bitterly cold, and we were all snugly tucked up in our blankets listening to the interesting experiences of a hardy old Boer hunter. It seems our retriever dog was in a restless mood that night, and went off alone on the prowl. Coming across a polecat, he attacked it and got well sprayed with its perfume. Returning in disgust to camp, he thrust his body under the folds of our tent and calmly proceeded to make himself comfortable on my blanket. Like wound-up steel springs suddenly released, we all shot from our blankets and were out in the bitterly cold frosty air in our night garments in less time than it takes to write half a line of this narrative. We howled at the dog, and hurled a sundry assortment of words at him, but he heeded us not. Eventually one of our number unlaced the tent door, gripped his nose with his numbed finger and thumb, and, darting in, drove the odorous creature out. Presently we heard a volley of ejaculations from under the wagon near by, and surmised the dog had endeavoured to seek sanctuary among our Zulu servants.

In the volume entitled *The Monkeyfolk of South Africa* an incident is related which is worth repeating here to illustrate more forcibly the pun-

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gency of the scent of the polecat. A tame baboon is made to tell the story. It is as follows :

“ One day my little friend, the terrier, cornered an animal which you called a Muishond or Stink Cat. Scientific fellows call him *Zorilla striata*. We both rushed on him together, but the little rascal sent a spray of some vile-smelling fluid over us. I couldn't stand it and retired. My terrier friend, however, rushed in, for his blood was up. After a fight he killed the muishond. But, Great Cicero!! didn't he just smell. Have you ever smelt musk? Well, try to imagine musk and incense, the smell of putrefying cabbages, and a lot of other evil-smelling things all mixed together, and you will have a slight idea of what that Stink Cat's perfume was like. We rolled in the dry dust and the grass, but the smell wouldn't come off. I felt sick, just as you folk feel when you are on a ship and the sea is very rough. My chum seemed quite chirpy and said he didn't mind the smell much. He was used to smells. It was his business in life to smell out things.

“ I thought, however, that my master might like the muishond; so I seized his tail and dragged his body to the wagon. My master was lying on his back smoking a pipe, and the Kafirs were telling each other very tall yarns about the number of cattle they possessed, and the number of wives they were going to buy when they settled down. With a volley of forcible exclamations the Kafirs

THE SNAKE MUISHOND

started up and scattered. My master hastily climbed up into the wagon and yelled at us to *Voert-z-ik*, which means to 'clear out' or go away. My chum and I had to eat our meals by ourselves for a week or more after that. In addition we had to sleep out in the cold at night, because the Kafirs refused to let us creep in under the tarpaulin-covered wagon where they slept at night."

THE SNAKE MUISHOND

(*Pæcilogale albinucha*)

Also known as the Slang Muishond or Snake Weasel

THIS muishond has the true shape of the typical weasel. It inhabits the eastern parts of South Africa, and extends from the Cape Province through Natal and north to Angola and Nyasaland. It forms burrows out in the bush-veld and hillsides. Its habits are, in general, similar to those of the Striped Muishond, but it is more secretive in disposition, and avoids the vicinity of man. It will track down animals as large as a hare, and once it obtains a grip on its victim it will not let go. A hunter related to me how he once saw a large bird of prey drop into the grass, and next instant soared away, gripping some creature, which seemed to be struggling desperately in its powerful talons. When high up in the air the bird seemed to be in difficulties. A fight, apparently, was taking place

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aloft. Presently the bird turned two or three somersaults, but recovered its balance. Then down it came with a rush, striking the ground with a fearful thud. The gentleman ran to where the bird had fallen, and was startled to observe a Snake Muishond, which, on hearing him approach, raised its head and presently vanished into the grass. On examining the bird he found it to be dying. Its throat had been dreadfully lacerated. When it stooped upon that Snake Muishond it evidently caught a "Tartar."

Although this weasel is as bloodthirsty as its European cousin, and destroys hares and game birds, it must be borne in mind that it is an inveterate enemy of rats, mice, the young and eggs of snakes, and hosts of noxious insects.

Apart from these invaluable services, the Snake Muishond is entitled to the protection of man for the reason that it preys upon that destructive rodent known as the Springhare or Springhaas (*Pedetes caffer*), which does so much damage to the crops and vegetable gardens. Like the European Weasel, it follows these animals into their burrows and destroys large numbers of them. If a nestful of young Springhares is found in the burrow, the Snake Muishond kills them all, although it may only be able to eat one or two. It will boldly attack and kill an adult Springhare. Sometimes when the creature is gripped by the Muishond, it will rush out of its burrow with the keen little hunter



The Snake Muishond or Slang Muishond, which means "Snake Weasel." It is a foot long from the nose to the root of the tail. It is black, with yellowish-white stripes.

THE SNAKE MUISHOND

hanging tenaciously to its throat, and will bound away until it either falls exhausted or becomes paralysed through terror.

Once a Snake Muishond secures a firm grip with its jaws it will not let go, and stoically endures the terrific bumping it gets when its victim races off in the hope of getting rid of the incubus.

In Great Britain the destruction of the smaller native carnivorous animals by the gamekeepers is the cause of financial losses to the farmers of many millions sterling annually, through the destruction caused by rats and mice.

In captivity the Snake Muishond soon becomes tame, and makes a gentle and interesting pet. I have kept them alive at various times, both in Natal and the Cape Province. They will eat anything of the nature of flesh. Both they and the Striped Muishond devour locusts with avidity.

These curious little weasels are termed Snake Muishonds because of their elongated bodies, not because of their snake-eating propensities, although snakes do form a portion of their very varied diet.

From the nose to the tip of the tail the length of an adult averages eighteen inches. The head is as broad as the body, and consequently wherever the head can go, the body can follow.

Although widely scattered in the eastern parts of South Africa, the Snake Muishond is rarely seen, because of its secretive and nocturnal habits.

THE CAPE SEA LION

(*Arctocephalus pusillus*)

Also known as the Hair Seal ; Sea Dog ; Robbe

ALTHOUGH not an inhabitant of the land or the rivers of South Africa, yet the Cape Seal or Sea Lion is claimed as one of our native fauna for the reason that it inhabits the bays, oceans, and islands about the coast.

The seal is one of the carnivorous or flesh-eating animals, and in this respect it is related to the cat and dog tribe. Without knowing anything of its habits, a glance at its teeth is sufficient to convince any naturalist that it is one of the carnivorous tribe of animals. However, it differs in its bodily organisation to all the flesh-eating land animals, for, instead of having well-developed legs and toes, it has flippers and finned feet. It is, in consequence, known as a Pinniped or Fin-footed carnivore, and its carnivorous relatives which dwell on the land are known as Fissiped carnivores, or, in other words, flesh-eating animals with separate toes. The paddle-like feet of the seal furnish a remarkable instance of the evolutionary processes



A group of Sea Lions. On the jagged rocks near Bird Island, in Algoa Bay, the seals gather in hundreds, the old males amusing themselves by engaging in combat with one another.

THE CAPE SEA LION

of Nature. The ancestors of seals, encompassed by enemies against which they could not successfully contend, and finding a plentiful supply of food in the water, gradually became aquatic in their habits ; and in the course of ages the body assumed a more rounded shape ; the under fur grew closer and finer, and the feet developed a flipper-like form perfectly adapted for propelling the animal swiftly through the water.

The Cape Sea Lion or Hair Seal belongs to a different family, and is quite distinct from the true seals of the Arctic and Antarctic regions. The chief difference is that the Sea Lions are able to use their hind limbs to aid them in climbing rocks and waddling along on land by bringing them forward under the body ; whereas the hind limbs of the true seals stick out straight behind, and cannot be brought forward, except in the case of a few species which can bring them forward to a limited degree. Another difference is the Sea Lion has external ears, whereas true seals do not possess them.

The Cape Sea Lion, like all the seal tribe, is just an ordinary flesh-eating or carnivorous, warm-blooded, air-breathing animal which lives in the sea, and is not, as popularly supposed, a kind of fish. They are in reality four-footed animals which have become adapted to the environment in which they live.

Sea Lions inhabit the coasts of South Africa

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from Walfisch Bay on the west to Algoa Bay on the east. They do not land on the mainland, except when driven ashore by a violent gale. After severe storms young seals of various ages, up to a year, have been captured on the Algoa Bay beach, alive and in an exhausted condition. On one occasion two adults took refuge in the mouth of the Zwartkops River.

At intervals along the coasts of South Africa there are vast accumulations of the remains of shells known as Kitchen Middens. In the distant past a race of pygmy yellow men dwelt in the rock shelters and caves and used roughly chipped stones for tools and weapons ; and in more recent times a tribe very similar in appearance and closely related to these yellow pygmies, but of greater stature, and known as Hottentots, inhabited the coasts. These wild yellow men scoured the beaches and gathered shellfish for food. The remains were thrown down on or near the beach, and in course of time great masses accumulated. In these Kitchen Middens the bones of Sea Lions are frequently found, indicating that these animals frequented the beaches in the past, for the occasional drifting ashore of one of them would not account for the quantities of bones I have found from time to time in these Kitchen Middens. Near the mouth of the Zwartkops River, at Algoa Bay, I discovered a large accumulation of the bones of seals in a Kitchen Midden, which indicated that a



Young Cape Seals on the rocks at Algoa Bay. The one on the right is stretched full length, basking in the sunshine ; the others are laboriously climbing up to get good positions. When alarmed they tumble, roll, and clamber into the sea.

THE CAPE SEA LION

great slaughter of seals had taken place at some special time, as the remains were not mixed at different levels with the shells and other debris, but were all on the same level. In every instance the skull had been broken open to obtain the brain for food. The mouth of the Zwartkops River, no doubt, in the past furnished a favourite breeding-ground of these seals, but incessant persecution drove them to the various islands off the coast, where they were secure from the attacks of these South African aborigines, for none possessed boats.

At Bird Island, near Algoa Bay, there is a large herd of Sea Lions which may be seen at any time of year on or about great masses of rock jutting out of the ocean near the island. I visited Bird Island one day, and so tame were the seals that they took little or no notice of the tug. Several large shaggy-maned males, almost as large as oxen, were fighting fiercely with one another. A couple, locked in a fierce embrace, rolled over and over down the ragged rocks into the water, where they continued their battle. When the tug whistle was blown several times in quick succession, the Sea Lions of all sizes made for the water in great alarm, rolling, tumbling, and climbing down the rocks in their haste to reach their native element, where they dived and swam with the greatest of ease and grace. These seals were in the past strictly protected, and in consequence their numbers increased rapidly, so much so that they became a menace

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to local fishing industry, and Government gave permission for a limited number to be destroyed, which was easily done by surprising them on land when basking in the sun, and spearing and clubbing them. The commercial value of their skins on the London market averaged from twenty to thirty shillings each. The flesh is not used for any purpose, although it is wholesome enough.

The chief islands around the South African coast where Sea Lions resort to breed are Hollam's Isle, south of Walfisch Bay ; Long Island, near Agra Pequena ; Jacob's Rock, in Saldahna Bay ; Robbensteen, in Table Bay ; and Dyer Island, off the Caledon coast.

Between the months of November and January the females visit these islands and give birth to two pups. Sea Lions breed once yearly, the period of gestation being twelve months, the female being impregnated again shortly after the pups are born. The young seals are suckled for three to four months, and during this period should they happen to lose their mother they, as a rule, are adopted by another mother seal which rears them, in addition to her own pups. During the time the young are being suckled the mother never ventures far from them, confining her fishing operations to the adjacent shallows. When the cubs are old enough to eat fish and hunt for themselves they make for the water, and do not return again to their place of birth.

THE CAPE SEA LION

Sea Lions are polygamous. The males swim off in advance of the females, each bent upon securing the most favourable site for a family home. Desperate battles take place, resulting in the stronger ones securing the best situations on the island.

On the arrival of the females, fighting is again resumed, the endeavour of each male being to secure as many females for his harem as he possibly can, and, of course, the stronger males secure the greater number, which averages usually from a dozen to twenty. This is a wise provision of Nature, for in this way the most robust of the male seals perpetuate the species and prevent the race deteriorating.

After the arrival of all the females, fighting ceases, and the males mount guard over their respective establishments. Should one of them venture to leave his harem to secure a meal of fish in the sea, the others instantly take advantage of his absence to steal away some of his family. However, after a time, when the amative excitement of the males subsides they are not so furiously jealous, and venture into the shallows adjacent to hunt for fish for a meal. When the males arrive first on the islands they are sleek and fat, and it is well for them that they have a surplus of fatty tissue, for so great is their jealousy of one another, and so carefully do they guard the females and cubs, that for several weeks they fast completely, not even

NATURAL HISTORY OF SOUTH AFRICA

visiting the shallow waters near by, for fear lest during their absence other males may interfere with their family arrangements. When they at last venture to leave their family for short periods in order to obtain food, they are weak and emaciated.

The diet of these seals consists entirely of fish—mostly small ones. They are large animals, and consequently consume great quantities of the finny tribe, which they seem to be able to capture with comparative ease.

The male Sea Lions arrive at maturity in about three years. These males, with increasing years, grow larger and more powerful, and develop a mane of long coarse hairs all round the neck, which is a good protection against the teeth of rivals. The female seals have no trace of a mane.

The canine teeth of the old male seals are large and strong. These are efficient weapons, backed up by the powerful muscles of the jaws, acting in conjunction with the great masses of strong muscular fibre on the neck, chest, and shoulders.

The teeth of the cubs are well developed and sharp at an early age. The cubs are beautiful little creatures with big black luminous eyes. They have a loud and plaintive cry like that of a kid in distress, but somewhat shriller. I kept several Sea Lion cubs alive at the Port Elizabeth Museum for a couple of weeks, and taught them to take milk from a baby's sucking bottle. For the first three or four days their bleating cries were deafening.



Two baby Sea Lions which were cast up alive on Algoa Bay beach during a storm.

THE CAPE SEA LION

Seals are rarely killed at sea, for the reason that they are such expert swimmers and divers ; but on land, where they go to rear their young, shed their fur, or to bask in the sun's rays, they are ungainly, awkward, and slow, and are in consequence easily surprised and slain with clubs. A heavy blow is dealt upon the skull, which kills them instantly. Spears are not often used, for the reason that the hide is damaged by the perforations.

The newly-born cubs have beautiful, short, glossy fur, which is quite black. However, the coat soon becomes silvery grey, owing to the tips of the hairs gradually becoming white.

Adult seals are dark brown in colour. They possess a soft woolly under-fur which is light brown. This is hidden from view by the longer coarse hair which covers the body of the animal.

The average length of an adult male is about six feet from the nose to the tail, which is but a stump. Some old males have been known to attain a length of eight feet, and were massive in proportion. The massiveness is confined to the neck and shoulders, giving these creatures enormous strength. The average length of a female is about four and a half feet.

Sea Lions are not true fur-bearing seals, and consequently are not much sought after, their pelts not being nearly so valuable as those of the fur seals. The finest skins are those of the females and young males.

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The skins are prepared for use by shaving away with a sharp knife the inner layer of skin. This process cuts off the roots of the long coarse hair, which is deeper rooted than the soft under-fur, and it thus becomes loose and may be brushed off, leaving the soft fur still adhering to the skin.

When prepared and dressed ready for converting into various articles of apparel and adornment, the fur is quite as soft and glossy as that of the Arctic seal, but it is shorter, which makes it of much lesser commercial value.

CLASSIFICATION OF THE ANIMALS MENTIONED IN THIS BOOK

Family : VIVERRIDÆ

The Civet Tribe

(Including Civets, Genets, Mongooses, Meerkats, etc.)

This family of carnivorous animals differ externally from the true cats in having longer heads, sharper muzzles, and shorter legs.

Some of the family are digitigrade, and others are plantigrade. The number of toes on each foot is usually five; there are, however, some exceptions. They have a larger number of teeth than the members of the Felidæ family.

The representatives of this family are confined to the Old World, with the exception of Australia and Papua. The greater number of species occur in Africa and Asia.

Species

(Inhabiting South Africa)

1. *Viverra civetta*, Schreb.
2. *Genetta tigrina*, Schreb.
3. *Genetta felina*, Thunb.
4. *Genetta ludia*, Thos. and Schw. *P.Z.S.*, 1906, p. 579.
5. *Genetta rubiginosa*, Puch.
6. *Mungos cafer*, Gmel.
7. *Mungos cauri*, A. Smith. *App. Rep. Ex. C.A.*, p. 42 (1836).
8. *Mungos ratlamuchi*, A. Smith. *App. Rep. Ex. C.A.*, p. 42 (1836).
9. *Mungos cauri swinnyi*. *Ann. Trans. Mus.*, vol. iv. (1913).
10. *Mungos auratus*, Thos. and Wrought. *P.Z.S.*, 1908, p. 543.

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11. *Mungos paludinosus typicus*, G. Cuv. *Règné Anim.*, ed. 2, i. p. 158 (1829).
- 11a. *Mungos paludinosus rubellus*, Thos. and Wrought. *P.Z.S.*, 1908, p. 166.
12. *Mungos pulverulentus*, Wagn.
13. *Mungos punctatissimus*, Temm.
14. *Mungos grandis*, Thos.
15. *Mungos albicauda*, Cuv.
16. *Mungos ruddi*, Thos. *Ann. Mag. Nat. Hist.* (7), xii. p. 465 (1903).
17. *Mungos ignitus*. *Ann. Trans. Mus.*, vol. iv., 1913.
18. *Helogale parvula*, Sund.
19. *Helogale brunnula*, Thos. and Schw. *P.Z.S.*, 1906, p. 581.
20. *Rhynchogale melleri*, Gray.
21. *Crossarchus fasciatus typicus*, Desm.
- 21a. *Crossarchus fasciatus senescens*, Thos. and Wrought. *P.Z.S.*, 1907, p. 291.
22. *Cynictis penicillata typica*, Cuv.
- 22a. *Cynictis penicillata intensa*, Schw. *P.Z.S.*, 1906, i. p. 104.
- 22b. *Cynictis penicillata steedmanni*, Ogil. *P.Z.S.*, 1833, p. 49.
- 22c. *Cynictis penicillata ogilbyi*, A. Smith. *South African Quart. Journ.*, ii. p. 117 (1834).
- 22d. *Cynictis penicillata pallidior*, Thos. and Schw. *P.Z.S.*, 1904, i. p. 175.
- 22e. *Cynictis penicillata leptura*, Smith. *III. South African Zool. Mamm.*, pl. xvii. (1839).
23. *Cynictis selousi*, de Wint.
24. *Bdeogale crassicauda*, Pet. *Reis. Moss. Saug.*, 1852, p. 119; *P.Z.S.*, 1908, p. 168.
25. *Suricata suricatta typica*, Erxl.
- 25a. *Suricata suricatta namaquensis*, Thos. and Schw. *P.Z.S.*, 1905, i. p. 134.
- 25b. *Suricata suricatta hamiltoni*, Thos. and Schw. *P.Z.S.*, 1905, i. p. 134.
- 25c. *Suricata suricatta lophurus*, Thos. and Schw. *P.Z.S.*, 1905, i. p. 133.

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Family : PROTELIDÆ

There is only one species representing this family. It differs from all others of the flesh-eating tribe by reason of the molar teeth being small, practically rudimentary, and set far apart in the jaw, in such a way as to be of no use for masticating food. The animal is hyæna-like in form ; the fore feet have five toes, and the hind feet four toes.

The Aard Wolf is confined to Africa, from the Cape to Angola and Somaliland.

Species

1. *Proteles cristatus*, Sparrm.

Family : HYÆNIDÆ

Flesh-eating animals with bodies sloping down from the shoulder to the rump, owing to the front legs being longer than the hind ones.

Teeth large and powerful ; strong bony crest to the skull for the attachment of large jaw muscles.

Head broad and heavy ; tail less than half the length of the body ; fur loose and long. General appearance ungainly.

The members of the family are confined to Africa and Southern Asia.

Species

(Inhabiting South Africa)

1. *Hyæna brunnea*, Thunb.
2. *Hyæna crocuta*, Erxl.

Division : CYNOIDEA

Family : CANIDÆ

(*The Dogs, Wolves, Jackals, and Foxes*)

This group of carnivorous animals is distinguished from other families of the same tribe by reason of certain differences in the formation of the skull, viz. the bulla is inflated

NATURAL HISTORY OF SOUTH AFRICA

and bladder-like, and is without any internal partition, the paroccipital process is prominent, and although in contact with the bulla is not applied to it, as is the case with the genera *Felidæ* and *Viverridæ*. Another anatomical difference is the presence of a long and coiled cæcum at the junction of the large and small intestine.

The molar teeth are triangular in shape, and nearly always two in number.

This family is world-wide in its distribution.

Species

(Inhabiting South Africa)

1. *Canis mesomelas*, Schreb.
2. *Canis adustus*, Sund.
3. *Vulpes chama*, A. Smith.
4. *Otocyon megalotis*, Desm.
5. *Lycakon pictus venaticus*, Burch.
- 5a. *Lycakon pictus zuluensis*, Thos. *Ann. Mag. Nat. Hist.* (7), xiv. p. 98 (1904).

Division : ARCTOIDÆ

Family : MUSTELIDÆ

(*Otters, Ratels, Muishonds, Weasels, Martens, etc.*)

Carnivorous animals with elongated bodies, short legs, and usually provided with glands for the secretion of an unpleasant, musky-smelling fluid for defensive purposes.

The members of this family, with one exception, may be distinguished by having one pair of upper and two of lower molar teeth, and by the inner part of the upper molars being longer from base to front than the outer side. The exception is the Ratel, which has a single pair of molars in the upper and lower jaws.

The members of this family inhabit all the continents, with the exception of Australia. They are also absent in Madagascar. The species comprising the family are exceptionally numerous in the temperate regions of the Northern Hemisphere.

CLASSIFICATION OF ANIMALS

Species

(Inhabiting South Africa)

1. *Aonyx capensis*, Schinz.
2. *Lutra maculicollis*, Licht.
3. *Mellivora ratel*, Sparr.
4. *Ictonyx capensis*, Kaup.
5. *Pæcilogale albinucha*, Gray.

Sub-order : PINNEPEDIA

(The Eared Seals, Walrus, and True Seals)

These flesh-eating mammals of the Order Carnivora have been placed in a separate Sub-order on account of the peculiar structure of their limbs, which are specially modified for an aquatic life.

Family : OTARIIDÆ

(*The Eared Seals*)

The Seals of this family may be distinguished from all others of the group by the presence of small, well-defined external ears ; when on land the hind flappers are turned forwards under the body for support, and as an aid in progression. They further differ in having the soles of fore and hind feet entirely devoid of hair ; and the nostrils are at the end of the snout, as in terrestrial animals generally.

This family has a wide distribution over the temperate and colder regions of both hemispheres, except in the North Atlantic, where it is not represented, owing to the lack of suitable breeding-grounds.

Species

(Inhabiting South Africa)

1. *Arctocephalus pusillus*, Schreb.

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